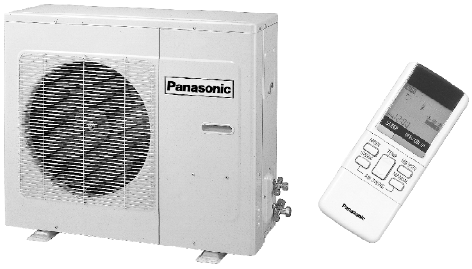
Order No: MAC0105013C3

Service Manual

Room Air Conditioner

CS-A182KR CU-A182KR / CS-A242KR CU-A242KR



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⚠ **WARNING**

This service information is designed for experienced repair technicians only and is not designed for use by the general public. It does not contain warnings or cautions to advise non-technical individuals of potential dangers in attempting to service a product. Products powered by electricity should be serviced or repaired only by experienced professional technicians. Any attempt to service or repair the product or products dealt with in this service information by anyone else could result in serious injury or death.

Panasonic

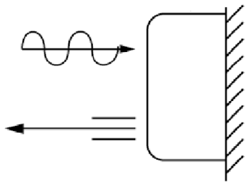
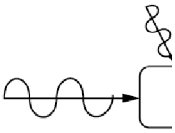
1. Features

- High Efficiency
- High Efficiency Airflow Circuit
- Compact Design
- Removable and Washable Front Panel
- Auto Restart after Power Failure

- **Long Piping up to 25m**
- **Deodorizing Control during operation**
- **Cold draught Control**

2. Functions

3. Product Specifications

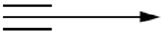
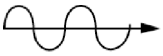
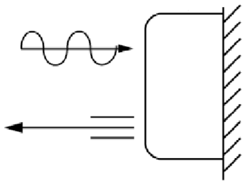
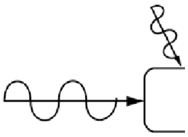
	Unit	CS-A182KR	CU-A18
Cooling Capacity	**kW** **Btu/h**	**5.20 - 5.15** **17,700 - 17,600**	
Heating Capacity	**kW** **Btu/h**	**6.20 - 6.15** **21,100 - 21,000**	
Moisture Removal	**l/h** **Pint/h**	**2.9** **6.1**	
Power Source	**Phase** **V** **Cycle**	**Single** **240 - 230** **50**	
Airflow Method	**OUTLET** **INTAKE**	**SIDE VIEW** 	**TOP VI** 

Air Volume	**Indoor Air (Lo)**	**m^3/min (cfm)**	**Cooling ; 11.2 (395) Heating ; 11.6 (409)**	**—**
	Indoor Air (Me)	**m^3/min (cfm)**	**Cooling ; 12.4 (437) Heating ; 12.9 (455)**	**—**
	Indoor Air (Hi)	**m^3/min (cfm)**	**Cooling ; 13.7 (480) Heating ; 14.2 (500)**	**—**
	Outdoor Air	**m^3/min (cfm)**	**—**	**Cooling ; 11 Heating ; 1**
Noise Level		**dB (A)**	**Cooling; High 43 - 43, Low 38 - 38 Heating; High 42 - 42, Low 38 - 38**	**Cooling; Hig Heating; Hig**
		(Power Level dB)	**(Cooling ; 56, Heating ; 55)**	**(Cooling ; 71, 72)**
Electrical Data	**Input**	**kW**	**Cooling ; 2.19 - 2.10 Heating ; 2.28 - 2.17**	
	Running Current	**A**	**Cooling ; 10.9 - 10.5 Heating ; 11.2 - 10.6**	
	COP	**W/W**	**Cooling ; 2.37 - 2.45 Heating ; 2.72 - 2.83**	
	Starting Current	**A**	**36.3**	
Piping Connection Port (Flare piping)		**inch inch**	**G ; Half Union 1/2” L ; Half Union 1/4”**	**G ; 3-way v L ; 3-way v**
Pipe Size (Flare piping)		**inch inch**	**G (gas side) ; 1/2” L (liquid side) ; 1/4”**	**G (gas sid L (liquid si**
Drain	**Inner diameter**	**mm**	**16**	**—**
Hose	**Length**	**m**	**0.75**	**—**
Power Cord Length Number of core-wire		**m**	**2.1 3 (1.5 mm^2)**	**— —**

Dimensions		**Height**	**inch (mm)**	**11 - 7/16 (290)**	**26 - 31/32**
		Width	**inch (mm)**	**38 - 19/32 (980)**	**31 - 1/2**
		Depth	**inch (mm)**	**7 - 11/16 (195)**	**11 - 13/16**
Net Weight			**lb (kg)**	**29 (13)**	**141 (6**
Compressor		**Type**		**—**	**Rotary (1 c rolling pist**
	Motor	**Type**		**—**	**Induction (**
	Rated	**Output**	**KW**	**—**	**1.7**
Air Circulation		**Type**		**Cross-flow Fan**	**Propelle**
		Material		**AS + Glass Fiber 30%**	**PC + AES + G 15%**
	Motor	**Type**		**Transistor (4-poles)**	**Induction (**
		Input	**W**	**61.9**	**139**
		Rated Output	**W**	**20**	**72**
	Fan Speed	**Low**	**rpm**	**Cooling ; 980 Heating ; 980**	**670 -**
		Medium	**rpm**	**Cooling ; 1,090 Heating ; 1,090**	**—**
		High	**rpm**	**Cooling ; 1,200 Heating ; 1,240**	**1,030 -**
Heat Exchanger	**Description**			**Evaporator**	**Conde**
	Tube material			**Copper**	**Copp**
	Fin material			**Aluminium**	**Alumin**
	Fin Type			**Slot Fin**	**Corrugat**
	Row / Stage			**(Plate fin configuration, forced dra**	
				2 × 14	**2 × 2**
	FPI			**21**	**14**
	Size (W × H × L)		**mm**	**732.0 × 294.0 × 25.4**	**769.2 × 66 732.9**
Refrigerant Control Device				**—**	**Capillary**
Refrigeration Oil			**(cm3)**	**—**	**SUNISO 4 ATMOS M**
Refrigerant (R-22)			**g (oz)**	**—**	**1,590 (5**
Thermostat				**Electronic Control**	**—**
Protection Device				**—**	**Inner Pro**
Capillary Tube	**Length**		**mm**	**—**	**Cooling ; 690 650**
	Flow Rate		**l/min**	**—**	**Cooling ; 13.0 20.**
	Inner Diameter		**mm**	**—**	**Cooling ; 1.6 1.9**
Air Filter	**Material Style**			**P.P. Honeycomb**	**—**
Compressor Capacitor			**µ F, VAC**	**—**	**35 µ F, 3**

Fan Motor Capacitor	μ F, VAC	—	3.0 μ F, 4

- Specifications are subject to change without notice for further improvement.

		Unit	CS-A242KR	CU-A24
Cooling Capacity		kW Btu/h	6.45 - 6.40 22,000 - 21,800	
Heating Capacity		kW Btu/h	7.80 - 7.65 26,600 - 26,100	
Moisture Removal		l/h Pint/h	3.8 8.0	
Power Source		Phase V Cycle	Single 240 - 230 50	
Airflow Method		OUTLET  INTAKE 	SIDE VIEW 	TOP VI 
Air Volume	Indoor Air (Lo)	m3/min (cfm)	Cooling ; 13.1 (462) Heating ; 14.1 (497)	—
	Indoor Air (Me)	m3/min (cfm)	Cooling ; 14.3 (504) Heating ; 15.4 (542)	—
	Indoor Air (Hi)	m3/min (cfm)	Cooling ; 15.7 (550) Heating ; 16.9 (600)	—
	Outdoor Air	m3/min (cfm)	—	Cooling ; 14 Heating ; 15

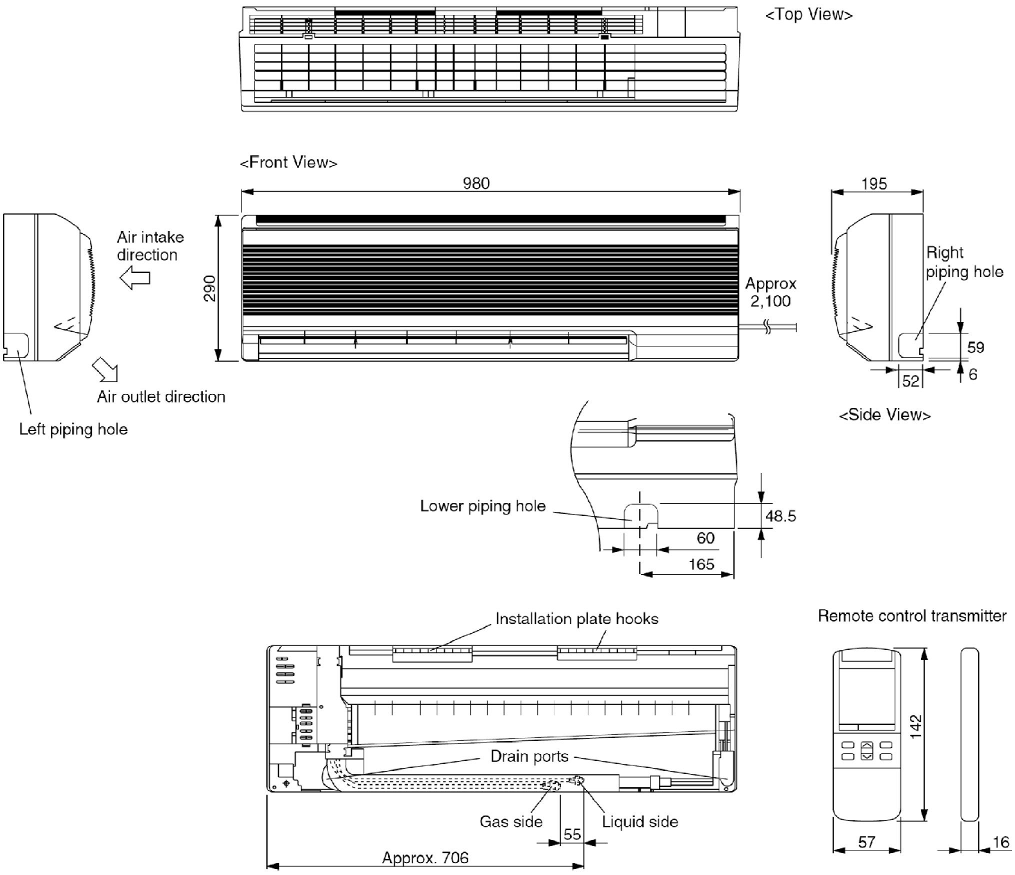
Noise Level			**dB (A)**	**Cooling; High 47 - 47, Low 41 - 41 Heating; High 46 - 46, Low 41 - 41**	**Cooling ; Hig Heating ; Hig**
			(Power Level dB)	**(Cooling ; 60, Heating ; 59)**	**(Cooling ; 76, 77)**
Electrical Data	**Input**		**W**	**Cooling ; 3.08 - 2.95 Heating ; 3.16 - 3.05**	
	Running Current		**A**	**Cooling ; 14.0 - 13.6 Heating ; 14.3 - 13.9**	
	COP		**W/W**	**Cooling ; 2.09 - 2.17 Heating ; 2.47 - 2.51**	
	Starting Current		**A**	**41.1**	
Piping Connection Port (Flare piping)			**inch inch**	**G ; Half Union 5/8” L ; Half Union 1/4”**	**G ; 3-way va L ; 3-way va**
Pipe Size (Flare piping)			**inch inch**	**G (gas side) ; 5/8” L (liquid side) ; 1/4”**	**G (gas side L (liquid sid**
Drain Hose	**Inner diameter**		**mm**	**16**	**—**
	Length		**m**	**0.75**	**—**
Power Cord Length Number of core-wire			**m**	**2.1 3 (2.5 mm2)**	**— —**
Dimensions		**Height**	**inch (mm)**	**11 - 7/16 (290)**	**26 - 31/32**
		Width	**inch (mm)**	**38 - 19/32 (980)**	**31 - 1/2 (**
		Depth	**inch (mm)**	**7 - 11/16 (195)**	**11 - 13/16**
Net Weight			**lb (kg)**	**29 (13)**	**150 (6**
Compressor		**Type**		**—**	**Rotary (1 cy rolling pist**
	Motor	**Type**		**—**	**Induction (2**
	Rated	**Output**	**KW**	**—**	**2.2**

Air Circulation	**Type**			**Cross-flow Fan**	**Propeller**
	Material			**AS + Glass Fiber 30%**	**PC + AES + Gl 15%**
	Motor	**Type**		**Transistor (4-poles)**	**Induction (4**
		Input	**W**	**72.2**	**191.0**
		Rated Output	**W**	**30**	**108**
	Fan Speed	**Low**	**rpm**	**Cooling ; 1,100 Heating ; 1,200**	**720 - 6**
		Medium	**rpm**	**Cooling ; 1,200 Heating ; 1,320**	**—**
		High	**rpm**	**Cooling ; 1,320 Heating ; 1,410**	**1,200 - 1**
Heat Exchanger	**Description**			**Evaporator**	**Conden**
	Tube material			**Copper**	**Coppe**
	Fin material			**Aluminium**	**Alumini**
	Fin Type			**Slot Fin**	**Corrugate**
	Row / Stage			**(Plate fin configuration, forced dra**	
				2 × 14	**2 × 2**
	FPI			**21**	**16**
	Size (W × H × L)		**mm**	**732.0 × 294.0 × 25.4**	**769.2 × 66 732.9**
Refrigerant Control Device				**—**	**Capillary**
Refrigeration Oil			**(cm^3)**	**—**	**SUNISO 4G ATMOS M6**
Refrigerant (R-22)			**g (oz)**	**—**	**1,800 (6**
Thermostat				**Electronic Control**	**—**
Protection Device				**—**	**Inner Prot**
Capillary Tube	**Length**		**mm**	**—**	**Cooling ; 700 649**
	Flow Rate		**l/min**	**—**	**Cooling ; 17.5 27.0**
	Inner Diameter		**mm**	**—**	**Cooling ; 1.8 H**
Air Filter	**Material Style**			**P.P. Honeycomb**	**—**
Compressor Capacitor			**µF, VAC**	**—**	**50 µF, 3**
Fan Motor Capacitor			**µF, VAC**	**—**	**3.0 µF, 4**

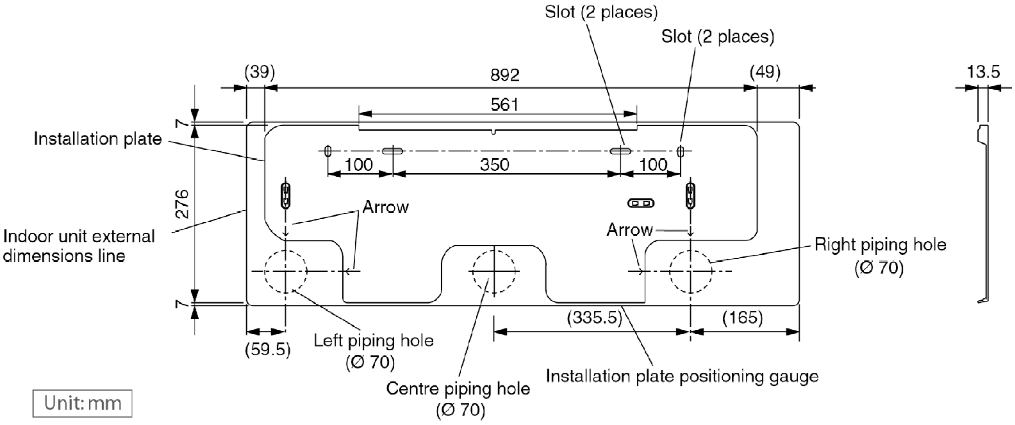
- Specifications are subject to change without notice for further improvement.

4. Dimensions

CS-A182KR / CS-A242KR

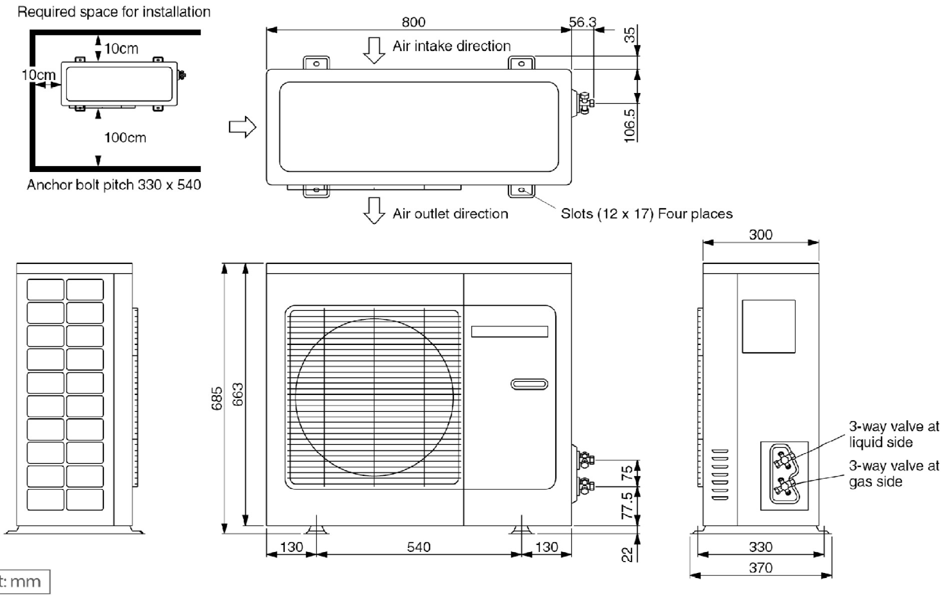

<Top View>
<Front View>
980
290
Approx
2,100
Air intake
direction
Air outlet direction
Left piping hole
195
Right
piping hole
59
6
52
<Side View>
Lower piping hole
48.5
60
165
Installation plate hooks
Drain ports
Gas side
Liquid side
55
Approx. 706
Remote control transmitter
142
57
16

Relative position between the indoor unit and the installation plate <Front View>


Slot (2 places)
Slot (2 places)
(39)
892
(49)
13.5
561
7
Installation plate
100
350
100
276
Arrow
Arrow
Indoor unit external
dimensions line
Right piping hole
(Ø 70)
7
(335.5)
(165)
(59.5)
Left piping hole
(Ø 70)
Centre piping hole
(Ø 70)
Installation plate positioning gauge

Unit: mm

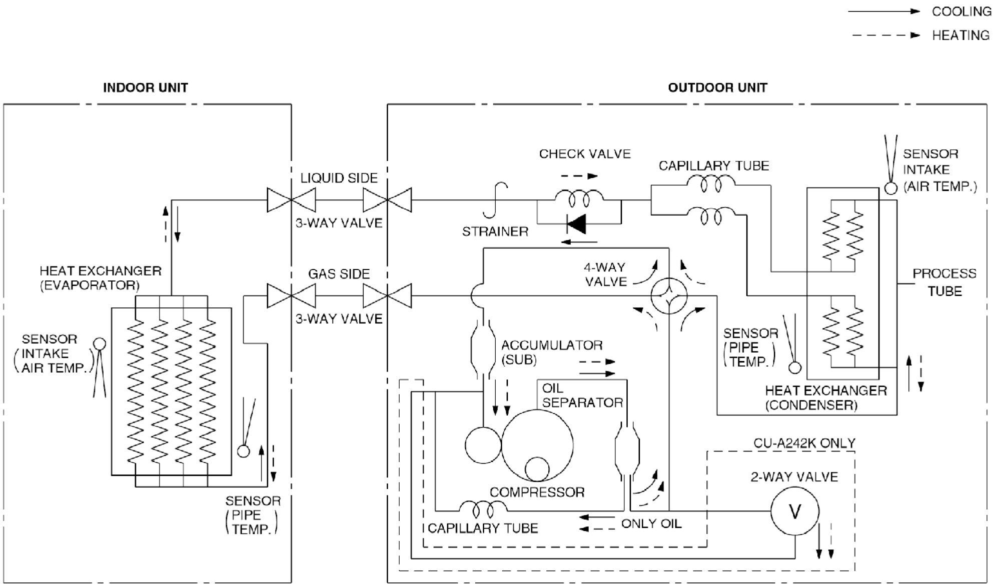
CU-A182KR / CU-A242KR


Required space for installation
10cm
10cm
100cm
Anchor bolt pitch 330 x 540
800
56.3
35
106.5
Air intake direction
Air outlet direction
Slots (12 x 17) Four places
300
685
663
75
77.5
22
130
540
130
330
370
3-way valve at liquid side
3-way valve at gas side

Unit: mm

5. Refrigeration Cycle Diagram

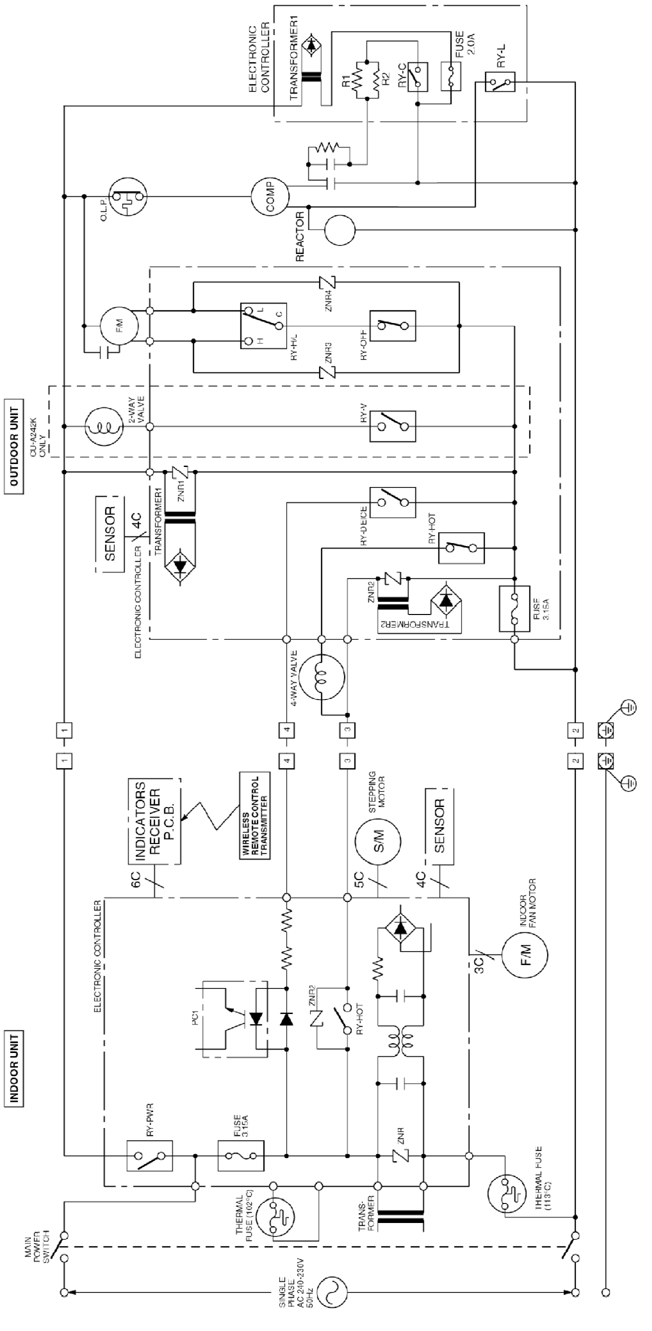
CS/CU-A182KR
CS/CU-A242KR


COOLING
HEATING
INDOOR UNIT
OUTDOOR UNIT
LIQUID SIDE
3-WAY VALVE
GAS SIDE
3-WAY VALVE
HEAT EXCHANGER (EVAPORATOR)
SENSOR (INTAKE AIR TEMP.)
SENSOR (PIPE TEMP.)
CHECK VALVE
CAPILLARY TUBE
STRAINER
SENSOR INTAKE (AIR TEMP.)
4-WAY VALVE
PROCESS TUBE
ACCUMULATOR (SUB)
SENSOR (PIPE TEMP.)
OIL SEPARATOR
HEAT EXCHANGER (CONDENSER)
CU-A242K ONLY
2-WAY VALVE
V
COMPRESSOR
CAPILLARY TUBE
ONLY OIL

6. Block Diagram

7. Wiring Diagram

CS-A182KR / CU-A182KR
CS-A242KR / CU-A242KR

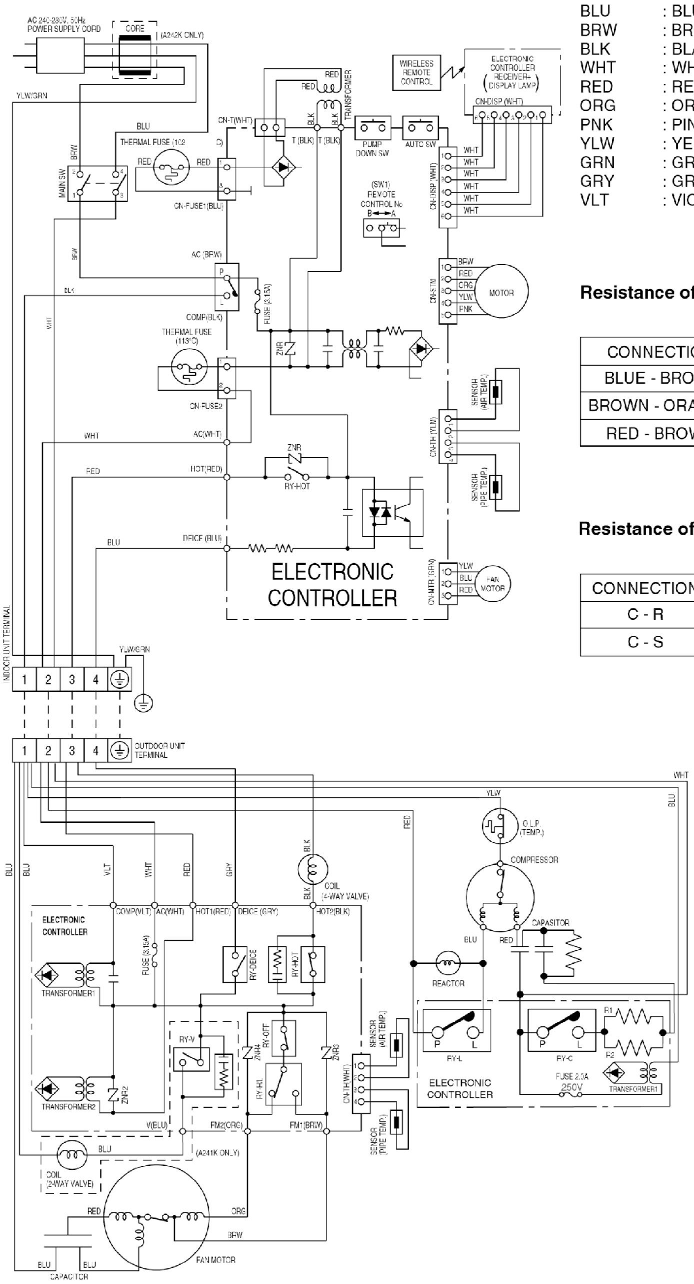


OUTDOOR UNIT
INDOOR UNIT
ELECTRONIC CONTROLLER
TRANSFORMER1
R1
R2
RY-C
FUSE 2.0A
RY-L
O.L.P
COMP
REACTOR
F/M
RY-H/L
ZNR4
ZNR3
RY-OFF
CU-A242K ONLY
2-WAY VALVE
RY-V
SENSOR
4C
ZNR1
RY-DEICE
RY-HOT
ZNR2
TRANSFORMER2
FUSE 3.15A
4-WAY VALVE
1
2
3
4
INDICATORS RECEIVER P.C.B.
WIRELESS REMOTE CONTROL TRANSMITTER
6C
5C
S/M
STEPPING MOTOR
3C
INDOOR FAN MOTOR
PC1
RY-PWR
ZNR
TRANS-FORMER
THERMAL FUSE (102°C)
THERMAL FUSE (113°C)
MAIN POWER SWITCH
SINGLE PHASE AC 220-230V 60Hz

※ ☐ Indicates the electronic control unit.

※ "C" Indicates the number of core wires. (Example:6C=6 core wires).

CS-A182KR / CU-A182KR
CS-A242KR / CU-A242KR


AC 240-230V, 50Hz POWER SUPPLY CORD
CORE
(A242K ONLY)
YLW/GRN
MAIN SW
THERMAL FUSE
CN-FUSE1(BLU)
CN-T(WHT)
TRANSFORMER
PUMP DOWN SW
AUTO SW
WIRELESS REMOTE CONTROL
ELECTRONIC CONTROLLER (RECEIVER+DISPLAY LAMP)
CN-DISP (WHT)
(SW1) REMOTE CONTROL No.
CN-DISP (WHT)
CN-STM
MOTOR
FUSE (3.15A)
COMP(BLK)
THERMAL FUSE (113°C)
ZNR
CN-FUSE2
AC(WHT)
HOT(RED)
RY-HOT
DEICE (BLU)
CN-TH (YLW)
SENSOR (AIR TEMP.)
SENSOR (PIPE TEMP.)
ELECTRONIC CONTROLLER
CN-MTR (GRN)
FAN MOTOR
INDOOR UNIT TERMINAL
1 2 3 4
OUTDOOR UNIT TERMINAL
O.L.P (TEMP.)
COMPRESSOR
CAPACITOR
COIL (4-WAY VALVE)
REACTOR
COMP(VLT)
AC(WHT)
HOT1(RED)
DEICE (GRY)
HOT2(BLK)
ELECTRONIC CONTROLLER
TRANSFORMER1
TRANSFORMER2
RY-DEICE
RY-HOT
RY-V
RY-OFF
RY-HI
ZNR1
ZNR2
ZNR3
CN-TH (WHT)
SENSOR (AIR TEMP.)
SENSOR (PIPE TEMP.)
FM2(ORG)
FM1(BRW)
V(BLU)
(A241K ONLY)
COIL (4-WAY VALVE)
FAN MOTOR
CAPACITOR
RY-L
RY-C
FUSE 2.5A 250V
TRANSFORMER1
ELECTRONIC CONTROLLER

Remarks:

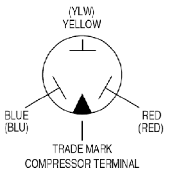
BLU : BLUE
BRW : BROWN
BLK : BLACK
WHT : WHITE
RED : RED
ORG : ORANGE
PNK : PINK
YLW : YELLOW
GRN : GREEN
GRY : GRAY
VLT : VIOLET

Resistance of Outdoor Fan Motor Windings

	CU-A182KR	CU-A242KR
CONNECTION	CWA92294 (Ω)	CWA92295 (Ω)
BLUE - BROWN	79.5	46.8
BROWN - ORANGE	65.1	64.6
RED - BROWN	70.8	73.7

Resistance of Compressor Windings

	CU-A182KR	CU-A242KR
CONNECTION	2JS350D3AA02 (Ω)	2JS464D3AA02 (Ω)
C - R	0.960	0.888
C - S	3.929	2.328


(YLW)
YELLOW
BLUE
(BLU)
RED
(RED)
TRADE MARK
COMPRESSOR TERMINAL

8. Operation Details

8.1. Cooling Mode Operation

Cooling in operation according to Remote Control setting.

Time Delay Safety Control (3 minutes)

- When the compressor is stopped by Power Switch, Remote Control or there is a power failure, it restarts after 3 minutes when the Power Switch, Remote Control is turned ON or the power supply is resumed.
- When the setting temperature is reached during cooling operation, the compressor stops and it will not start for 3 minutes.

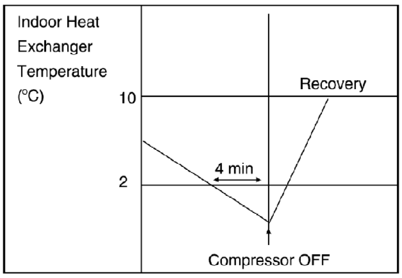
7 minutes Time Save Control

- The compressor will start automatically if it has stopped for 7 minutes even if the room temperature is below the compressor ON temperature.

Anti-Freezing Control

- If the temperature of the indoor heat exchanger falls continuously below 2°C for 4 minutes, the compressor turns off to protect the indoor heat exchanger from freezing. The fan speed setting remains the same.
- Compressor recommences when the indoor heat exchanger temperature rises to 10°C (Recovery).

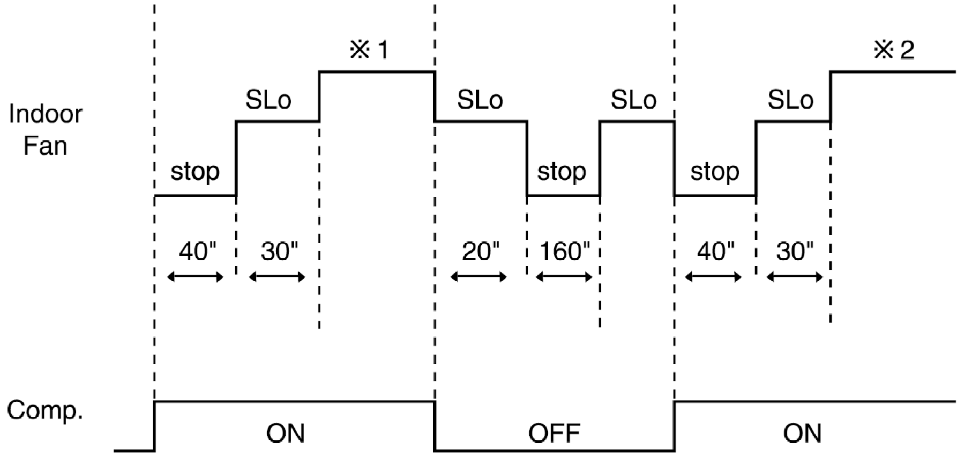
※ 3 minutes waiting of Time Delay Safety Control is valid for Cooling Operation.



Automatic Fan Speed Mode

When Automatic Fan Speed is selected at Remote Control during cooling operation.

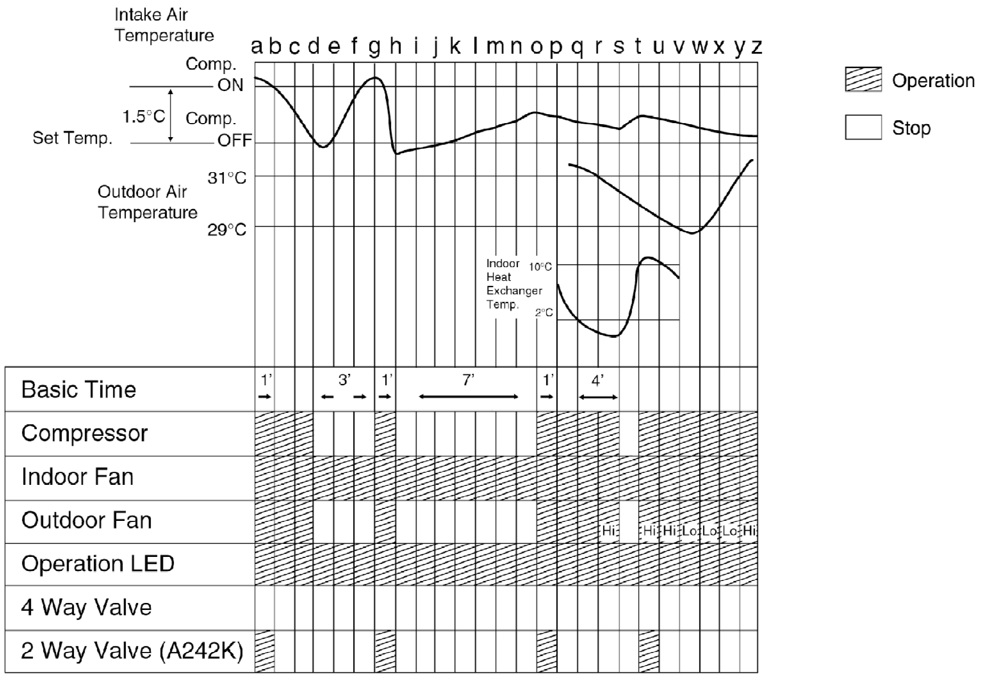
- Fan speed rotates in the range of Hi to Me.
- Deodorizing Control.


Indoor Fan
stop
SLo
※1
SLo
stop
SLo
stop
SLo
※2
40"
30"
20"
160"
40"
30"
Comp.
ON
OFF
ON

※1 Fan Speed is Hi until the compressor stops (when the room temperature reaches setting temperature).

※2 Fan Speed is Me after the compressor restarts.

Cooling Operation Time Diagram


Intake Air Temperature
a b c d e f g h i j k l m n o p q r s t u v w x y z
Comp. ON
1.5°C
Comp. OFF
Set Temp.
Outdoor Air Temperature
31°C
29°C
Indoor Heat Exchanger Temp.
10°C
2°C
Operation
Stop
Basic Time
1'
3'
1'
7'
1'
4'
Compressor
Indoor Fan
Outdoor Fan
Hi
Hi
Hi
Lo
Lo
Lo
Hi
Operation LED
4 Way Valve
2 Way Valve (A242K)

<Description of operation>

d – g : Time Delay Safety Control (waiting for 3 minutes)
g – h : 60 sec. Forced Operation
h – o : 7 min. Time Save Control
q – t : Anti Freezing Control
v – y : Outdoor Fan Control

8.2. Soft Dry Mode Operation

- **The unit starts cooling operation until the room temperature reaches the setting temperature set on the Remote Control, and then Soft Dry operation will start.**
- **During Soft Dry operation, the Indoor Fan operates with SLo speed.**
- **Once room temperature reaches below Soft Dry OFF temperature. Indoor Fan, Compressor and Outdoor Fan Stop for 6 minutes.**

Time Delay Safety Control

- **Once the compressor stops, it will not start for 3 minutes during Cooling operation.**

Anti-Freezing Control

- **Same as Anti-Freezing Control for Cooling Mode operation. (For Soft Dry region, 6 minutes waiting is valid during compressor**

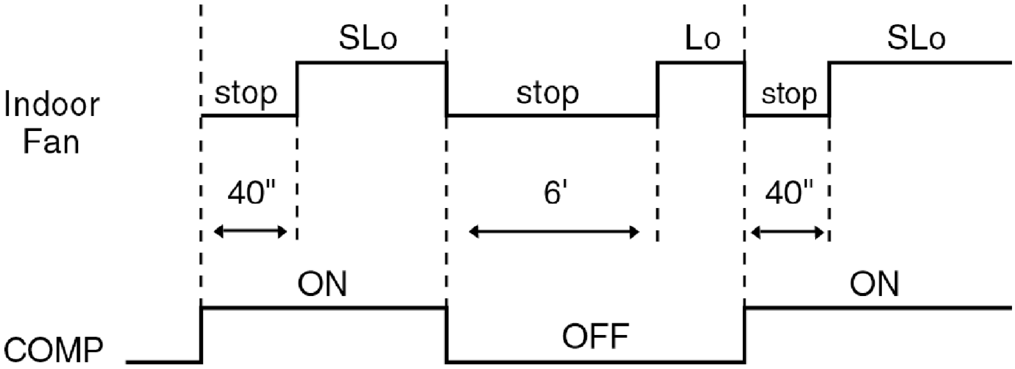
stops.) /

Automatic Fan Speed Mode

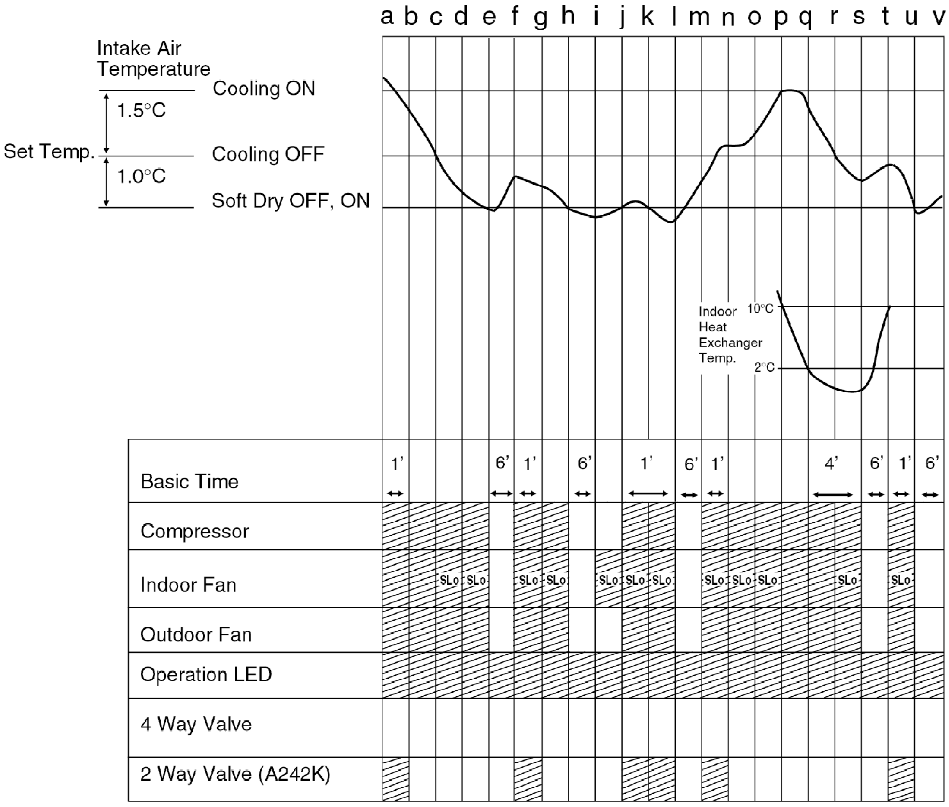
When Automatic Fan Speed is selected at Remote Control during Soft Dry operation.

- Fan speed rotates at SLo speed.

- Deodorizing Control.


Indoor Fan
stop
SLo
stop
Lo
stop
SLo
40"
6'
40"
COMP
ON
OFF
ON

Soft Dry Operation Time Diagram



<Description of operation>

a – c, p – r : Cooling Operation
c – p, r – v : Soft Dry Operation
e – f : Soft Dry OFF
j – l : 60 sec. Forced Operation
q – t : Anti Freezing Control

▨ Operation

☐ Stop

8.3. Heating Mode Operation

- Heating in operation according to Remote Control setting.

Time Delay Safety Control

- When the compressor is stopped by Power Switch, Remote Control or there is a power failure, it restarts after 3 minutes when the Power Switch, Remote Control is turned ON or the power supply is resumed.

- When the setting temperature is reached during heating operation, the compressor stops and it will not start for 4 minutes. /

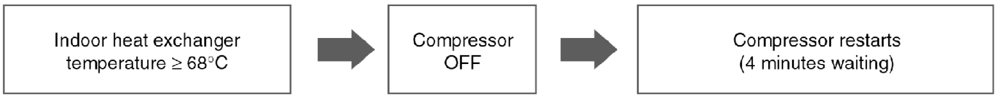
Overload Protection Control

- If the temperature of the Outdoor Heat Exchanger less than -3°C, Outdoor Fan is ON. The Outdoor Fan stop, when Outdoor Heat Exchanger temperature is T_b or more according to Outdoor Air Temperature region as table below:

Outdoor Air Temperature	<10°C	≥10°C ~ <15°C	≥15°C ~ <20°C	≥20°C ~ <25°C	≥25°C	Outdoor Fan OFF
T_b	≥5°C	≥4°C	≥3°C	≥2°C	≥1°C	

During starting of Heating mode and after deice, Outdoor Fan ON for 90 sec (Hi).

- If the indoor heat exchanger becomes 68°C or more, the compressor will stop and restart automatically. / (Time Delay Safety Control - 4 minutes waiting)

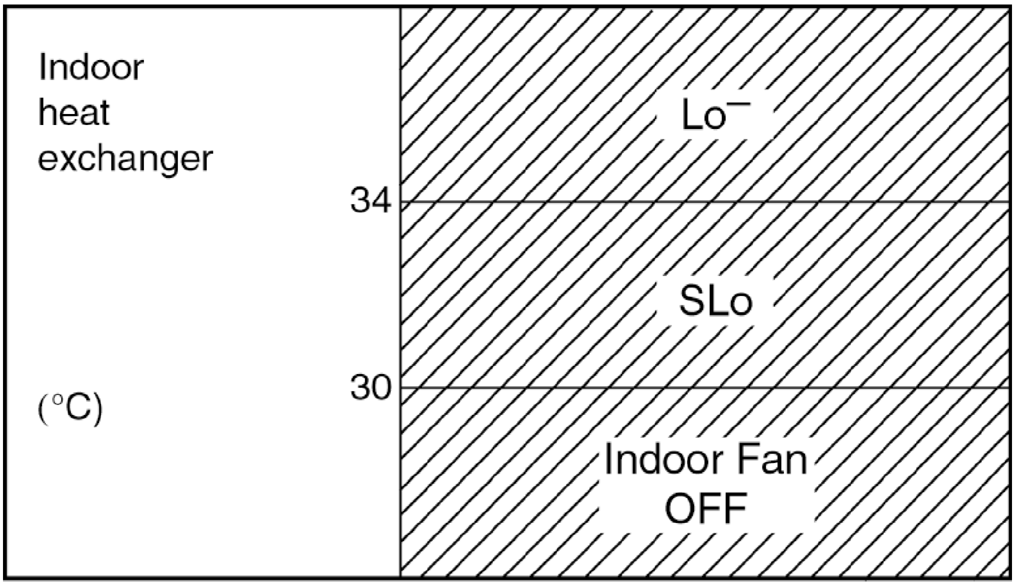

Indoor heat exchanger temperature ≥ 68°C
Compressor OFF
Compressor restarts (4 minutes waiting)

4-way Valve Control

- 4-way valve ON during Heating operation, except deicing operation.
- When the unit is switched to “OFF” during Heating operation, 4-way valve stays at Heating position for 5 minutes.

Hot Start Control

When Heating operation starts, Indoor Fan will not start until the indoor heat exchanger reaches 30°C as diagram shown.

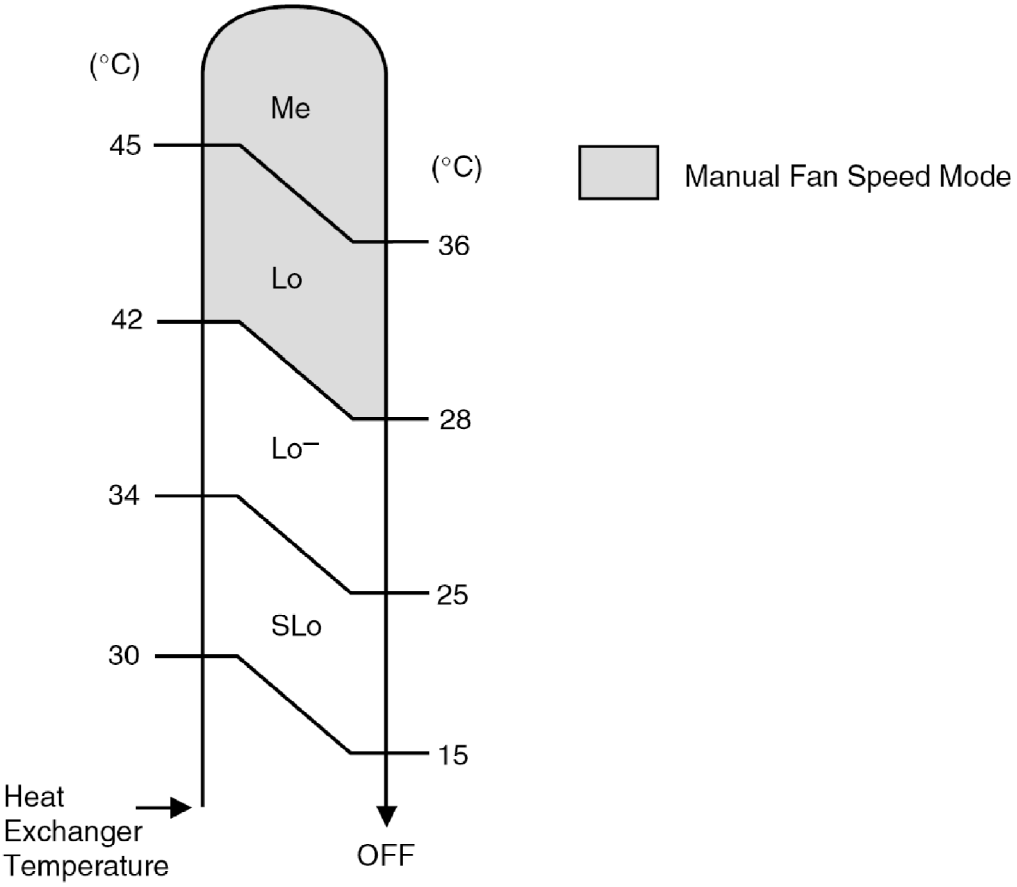

Indoor
heat
exchanger
(°C)
34
30
Lo⁻
SLo
Indoor Fan
OFF

Hot Start is completed when indoor heat exchanger rises to 42°C.
Maximum Hot start duration = 4 minutes. After 4 minutes,
Hot start operation will be shifted to normal Heating operation.

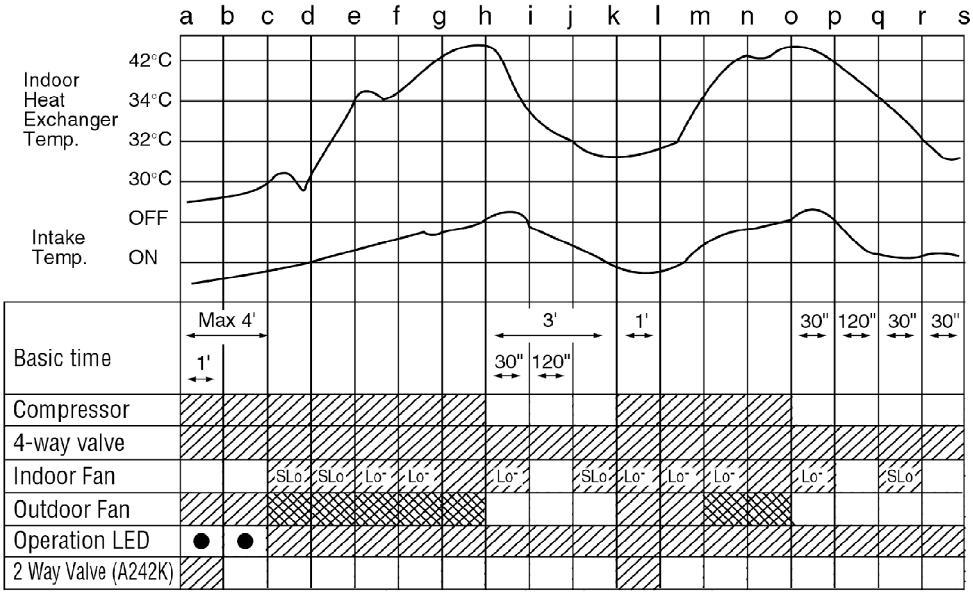
Automatic Fan Speed Mode

When Automatic Fan Speed is selected at Remote Control during heating operation.

- **Fan speed rotates in the range of Me → SLo according to the heat exchanger temperature.**


(°C)
Me
45
(°C)
36
Lo
42
28
Lo−
34
25
SLo
30
15
Heat Exchanger Temperature
OFF
Manual Fan Speed Mode

Heating Operating Time Diagram


a b c d e f g h i j k l m n o p q r s
Indoor Heat Exchanger Temp.
42°C
34°C
32°C
30°C
OFF
ON
Intake Temp.
Basic time
Max 4'
1'
3'
30"
120"
1'
30"
120"
30"
30"
Compressor
4-way valve
Indoor Fan
SLo
SLo
Lo
Lo
Lo
SLo
Lo
Lo
Lo
Lo
SLo
Outdoor Fan
Operation LED
2 Way Valve (A242K)

<Description of operation>

a – c : Hot start (Indoor fan = OFF)

c – d : Hot start (Indoor fan = SLo)

h – k, o – s : Indoor fan control (controlled during thermostat OFF)

● : Blinking

▨ Operation

☐ Stop

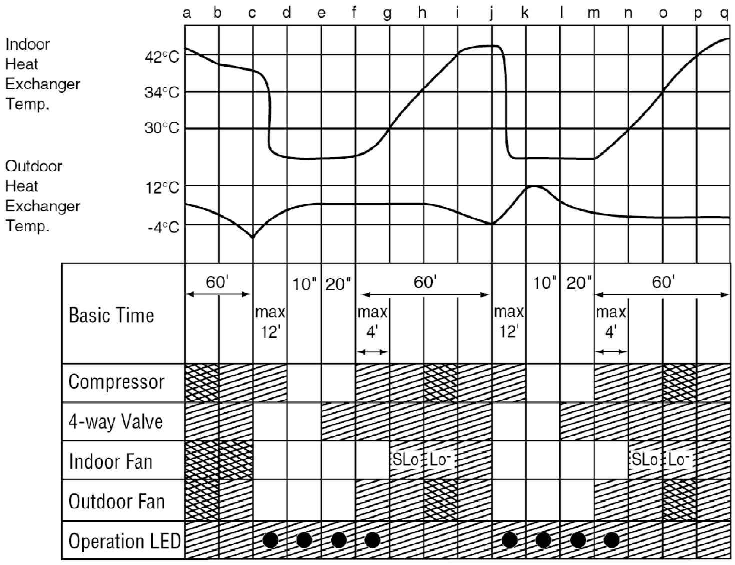
▩ Operation or Stop

Deicing Control

Deice starts to prevent frosting at outdoor heat exchanger.

- **Normal Deicing**
  Deice operations detection commences in Heating operation starts or 60 minutes after previous deice operation. If the outdoor piping temperature drops to -4°C or 50 sec. continuously during compressor is in operation, deice will start. / (There is no detection during Outdoor Fan stops.)
- **Overload Deicing**
  During heating operation, if the outdoor Fan OFF duration (due to overload control) is accumulated up to 60 minutes and after compressor starts for 1 minutes, deicing starts.
- **Deicing ends when**
  (a) 12 minutes after deicing operation starts;
  (b) The outdoor piping temperature rises to about 12°C.
- **After deicing operation, compressor stops for 30 seconds and 4-way valve stays at cooling position for 10 seconds.**

a) Normal Deicing Time Diagram


a b c d e f g h i j k l m n o p q
Indoor Heat Exchanger Temp.
42°C
34°C
30°C
Outdoor Heat Exchanger Temp.
12°C
-4°C
Basic Time
60'
max 12'
10"
20"
max 4'
60'
max 12'
10"
20"
max 4'
60'
Compressor
4-way Valve
Indoor Fan
SLo
Lo
SLo
Lo
Outdoor Fan
Operation LED

<Description of operation>

a – c : Deicing operation judging condition established.

c – f : Deicing operation.

f – : Hot start (add 4 minute delay timing)

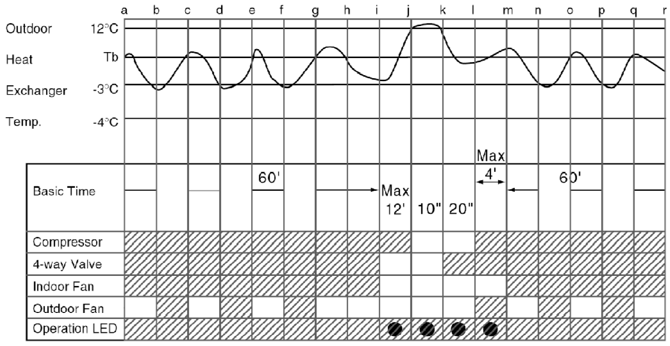
● : Blinking

▨ Operation

☐ Stop

▩ Operation or Stop

b) Overload Deicing Time Diagram


a b c d e f g h i j k l m n o p q r
Outdoor Heat Exchanger Temp.
12°C
Tb
-3°C
-4°C
Basic Time
60'
Max 12'
10"
20"
Max 4'
60'
Compressor
4-way Valve
Indoor Fan
Outdoor Fan
Operation LED

<Description of operation>

a – i : Overload control.

i – l : Overload deicing.

l – m : Hot start (add 4 min delay timing).

m – r : Overload control.

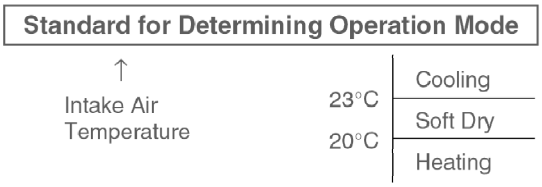
● : Blinking

▨ Operation

☐ Stop

8.4. Automatic Mode Operation

a) **When the Automatic Mode Operation is selected, the indoor fan operates at SLo fan speed for sense intake air temperature and determine the 1st operation mode.**



※ Automatic Set Temperature Refer c) as below.

b) **Operation mode will be determined again after 1 hour of operation, if the room temperature rea temperature and compressor off timer is over 7 minutes 30 seconds continuously.**

※ Indoor intake air is less than 16°C, Heating mode will immediate operate.

※ The present operation mode will be continued, if the room temperature does not reach to s temperature (Compressor keeps running) eventhough after 1 hour from automatic operati started.

— **For 2nd judgement onwards, indoor fan will operate for 25 seconds to sense the intake air tem determining operation mode.**

Standard for Determining Operation Mode 2nd Judgement onwards

Present Mode	**Judgement**	**Next Mode**		
		Cooling	**Soft Dry**	**Heating**
Cooling	**23°C** **Cooling** **Heating**	**O (Judgement: 23°C & Above)**	**Not Applicable**	**O (Judgemen Below 23°C**
Soft Dry	**20°C** **Soft Dry** **Heating**	**Not Applicable**	**O (Judgement: 20°C & Above)**	**O (Judgemen Below 20°C**
Heating	**25°C** **Cooling** **Heating**	**O (Judgement: 25°C & Above)**	**Not Applicable**	**O (Judgemen Below 25°C**

※ Automatic Set Temperature Refer c) as below.

c) **Automatic Set Temperature**
For each operation, set temperature will automatically set as shown below.
However it can be selected 2°C higher or 2°C lower from standard set temperature by pressin "Room Temperature Setting button".

Operation Mode	Higher	Standard	Lower
	(+2°C)	(±0°C)	(-2°C)
Cooling	27°C	25°C	23°C
Soft Dry	24°C	22°C	20°C
Heating	23°C	21°C	19°C

8.5. Sleep Mode Auto Operation

Cooling or Soft Dry Operation

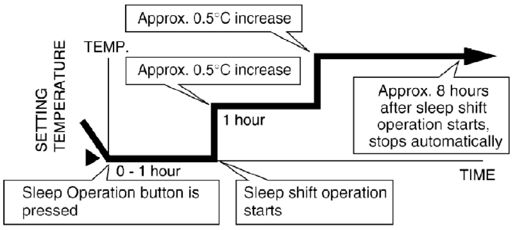
When you press the SLEEP Mode, the following movement will start to avoid overcooling.

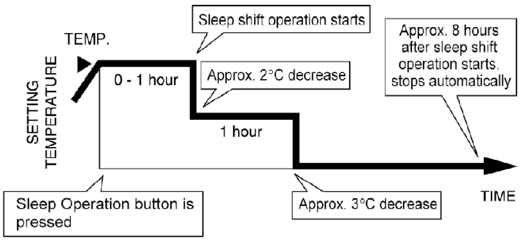
- **The fan speed refer to Indoor Fan Motor Control.**
- **The setting temperature will be risen by 0.5°C at the start of operation and by 0.5°C one hour later.**
- **The operation will stop after 8 hours.**
- **When using together with the Timer, the ON-Timer has priority.**

Heating Operation

When you press the SLEEP Mode, the following movement will start to avoid overheating.

- **The fan speed refer to Indoor Fan Motor Control.**
- **The setting temperature will be risen by 2°C at the start of operation and by 3°C one hour later.**
- **The operation will stop after 8 hours.**
- **When using together with the Timer, the ON-Timer has priority.**


Approx. 0.5°C increase
TEMP.
SETTING TEMPERATURE
Approx. 0.5°C increase
1 hour
Approx. 8 hours after sleep shift operation starts, stops automatically
0 - 1 hour
TIME
Sleep Operation button is pressed
Sleep shift operation starts


Sleep shift operation starts
TEMP.
Approx. 8 hours after sleep shift operation starts, stops automatically
SETTING TEMPERATURE
0 - 1 hour
Approx. 2°C decrease
1 hour
Sleep Operation button is pressed
Approx. 3°C decrease
TIME

8.6. Auto Restart Control

- **If there is a power failure, operation will be automatically restarted when the power is resumed. / It will start with previous operation mode and airflow direction. / (Time Delay Safety Control is valid)**
- **Auto Restart Control is not available when Timer or Sleep Mode is set.**
- **This control can be omitted by cutting the jumper wire J2. (Refer Circuit Diagram)**

8.7. Indoor Fan Speed Control

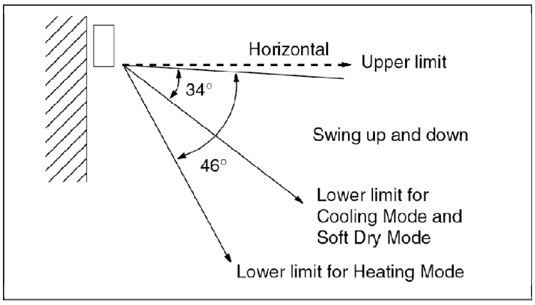
- **Auto Fan Speed Control / When set to Auto Fan Speed, the fan speed is adjusted between maximum and minimum setting as shown in the table.**
- **Manual Fan Speed Control / Basic fan speed adjustment (3 settings, from Lo to Hi) can be carried out by using the Fan Speed selection button.**

Fan Speed		High Speed ←→ Low Speed							
No.		8	7	6	5	4	3	2	1
Cooling	Manual		O	O	O				
	Auto		O	O			O		
	Sleep					O			
Soft Dry	Manual, Auto						O		
	Sleep					O			
Heating	Manual (A182K)	O		O	O				
	Manual (A242K)	O	O	O					
	Auto			O	O	O	O		
	Sleep					O	O		
Voltage to Fan Motor Drive Transistor (DCV)	CS-A182K	44.0	42.0	36.3	31.2	25.3	21.0	8.0	8.0
	CS-A242K	52.8	47.8	41.4	36.3	28.0	21.1	8.0	8.0
		SHi	Hi	Me	Lo	Lo-	SLo	START 2	STAR 1

8.8. Airflow Direction Control

Airflow Direction Auto-Control

- **When set a Airflow Direction Auto-Control with remote control, the louver swings up and down as shown in the diagram.**
- **The louver does not swing when the Indoor Fan stops during operation.**
- **When stopped with remote control, the discharge vent is closed with the louver.**


Horizontal
Upper limit
34°
Swing up and down
46°
Lower limit for Cooling Mode and Soft Dry Mode
Lower limit for Heating Mode

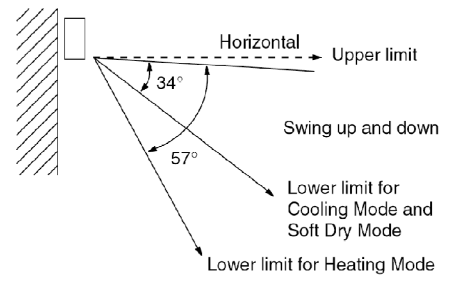
※ The left and right airflow direction louvers can be adjusted manually.

※ 1. There is no swinging while indoor fan is stopped during Cooling and Soft Dry operation.

※ 2. In Heating operation, when the indoor heat exchanger temparature rises to 38°C, the airflow direction is changed from upper limit to lower limit. When the indoor heat exchanger temperature falls to 35°C, the airflow direction is changed from lower limit to upper limit.

Airflow Direction Manual Control

- **When the airflow direction set button is pressed, the automatic airflow is released and the airflow direction louver move up and down in the range shown in the diagram.**
  The louver can be stopped by releasing the button at the desired louver position.
- **When the remote control is used to stop the operation, the discharge vent is closed with airflow direction louver.**


Horizontal
Upper limit
34°
Swing up and down
57°
Lower limit for Cooling Mode and Soft Dry Mode
Lower limit for Heating Mode

The louver can be adjusted with in a range "Airflow Direction Setting Button" is pressed.

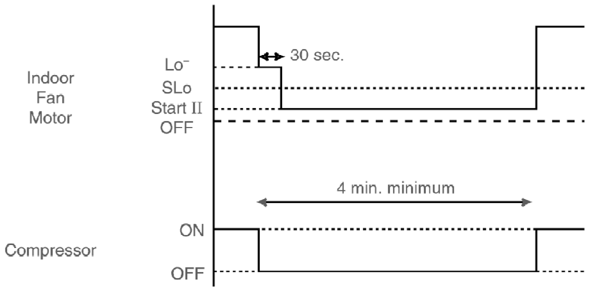
※ The left and right airflow direction louvers can be adjusted manually.

8.9. Delay ON Timer Control

- **When the Delayed ON Timer is set by using the remote control, the unit will start operate slightly before the set time, so that the room will reach nearly to the set temperature by the desired time.**

- For Cooling and Soft Dry mode, the operation will start, 15 minutes before the set time.
- For Heating mode, the operation will start 30 minutes before the set time.
- For Automatic mode, the indoor fan will operate at SLo speed for 20 seconds, 30 minutes before the set time to detect the intake air temperature to determine the operation mode. The operation indication lamp will blink at this time.

8.10. Cold Draught Control



• When COMP = Thermal OFF, indoor fan speed immediately changed to Lo^- for 30 sec., follow by Start II speed until COMP = ON.

9. Operating Instructions

10. Installation Instructions

Required tools for Installation Works			
1. Philips screw driver	5. Spanner	9. Gas leak detector	13. Multimeter
2. Level gauge	6. Pipe cutter	10. Measuring tape	14. Torque wrench 18 N.m (1.8 kgf.m) 55 N.m (5.5 kgf.m) 65 N.m (6.5 kgf.m)
3. Electric drill, hole core drill (ø70 mm)	7. Reamer	11. Thermometer	15. Vacuum pump
4. Hexagonal wrench (4 mm)	8. Knife	12. Megameter	16. Gauge manifold

10.1. Safety Precautions

- Read the following “SAFETY PRECAUTIONS” carefully before installation.
- Electrical work must be installed by a licensed electrician. Be sure to use the correct rating of the power plug and main circuit for the model to be installed.
- The caution items stated here must be followed because these

important contents are related to safety. The meaning of each indication used is as below.
Incorrect installation due to ignoring of the instruction will cause harm or damage, and the seriousness is classified by the following indications.

⚠ WARNING	**This indication shows the possibility of causing death or serious injury.**

⚠ CAUTION	**This indication shows the possibility of causing injury or damage to prop**

The items to be followed are classified by the following symbols:

⊘	**Symbol with background white denotes item that is PROHBITED from doi**

- Carry out test running to confirm that no abnormality occurs after the installation. Then, explain to user the operation, care and maintenance as stated in instructions. Please remind the customer to keep the operating instructions for future reference.

⚠ WARNING
1. Engage dealer or specialist for installation. If installation done by the user is defective, it will c water leakage, electrical shock or fire.
2. Install according to this installation instruction strictly. If installation is defective, it will cause leakage, electrical shock or fire.
3. Use the attached accessories parts and specified parts for installation. Otherwise, it will cause to fall, water leakage, fire or electrical shock.
4. Install at a strong and firm location which is able to withstand the set's weight. If the strength i enough or installation is not properly done, the set will drop and cause injury.
5. For electrical work, follow the local national wiring standard, regulation and this installation instruction. An independent circuit and single outlet must be used. If electrical circuit capacity enough or defect found in electrical work, it will cause electrical shock or fire.
6. Use the specified cable (2.5 mm2) and connect tightly for indoor/outdoor connection. Connect and clamp the cable so that external force will be acted on the terminal. If connection or fixing perfect, it will cause heat-up or fire at the connection.
7. Wire routing must be properly arranged so that control board cover is fixed properly. If control cover is not fixed perfectly, it will cause heat-up at connection point of terminal, fire or electric

⚠ WARNING

8. **When carrying out piping connection, take care not to let air or other substances other than th specified refrigerant go into refrigeration cycle. Otherwise, it will cause lower capacity, abnorm pressure in the refrigeration cycle, explosion and injury.**

9. **Do not damage or use unspecified power supply cord. Otherwise, it will cause fire or electrical shock.**

10. **Do not modify the length of the power supply cord or use of the extension cord, and do not share the single outlet with other electrical appliances. Otherwise, it will cause fire or electrical shock.**

⚠ CAUTION

1. **Grounding is necessary. It may cause electrical shock if grounding is not perfect.**

2. **Do not install the unit at place where leakage of flammable gas may occur. In case gas leaks and accumulates at surrounding of the unit, it may cause fire.**

3. **Carry out drainage piping as mentioned in installation instructions. If drainage is not perfect, w may enter the room and damage the furniture.**

ATTENTION

1. **Selection of the installation location and installation.**

   Select a installation location which is rigid and strong enough to support or hold the unit, and location for easy maintenance.

2. **Power supply connection to the room air conditioner.**

   Connect the power supply cord of the room air conditioner to the mains using one of the follow method.

   Power supply point shall be the place where there is ease for access for the power disconnect case of emergency.

   In some countries, permanent connection of this room air conditioner to the power supply is prohibited.

   1. Power supply connection to the receptacle using a power plug.
   Use an approved 16A power plug with earth pin for 2.0 HP and 20A for 2.5 HP for the connection to the receptacle.
   2. Power supply connection to a circuit breaker for the permanent connection. Use an approved 16A circuit breaker for 2.0 HP and 20A for the permanent connection. It must be a double pole switch with a minimum 3 mm contact gap.

3. **Do not release refrigerant.**

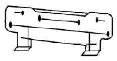
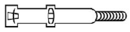
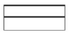
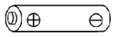
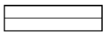
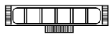
   Do not release refrigerant during piping work for installation, reinstallation and during repairin refrigeration parts. Take care of the liquid refrigerant, it may cause frostbite.

4. **Installation work.**

   It may need two people to carry out the installation work.

5. **Do not install this appliance in a laundry room or other location where water may drip from the etc.**

Attached accessories

No.	Accesories part	Qty.	No.	Accessories part	Qty.
1	Installation plate 	1	5	Band 	2
2	Installation plate fixing screw 	6	6	Remote control 	1
3	Vinyl tape 	3	7	Battery 	2
4	Vinyl tape 	1	8	Air purifiying filter 	2
			9	Drain elbow 	1

Accesories: Flaring piping kit
CZ-4F5, 7, 10AN
CZ-52F5, 7, 10AN

SELECT THE BEST LOCATION

INDOOR UNIT

- **There should not be any heat source or steam near the unit.**
- **There should not be any obstacles blocking the air circulation.**
- **A place where air circulation in the room is good.**
- **A place where drainage can be easily done.**
- **A place where noise prevention is taken into consideration.**
- **Do not install the unit near the door way.**
- **Ensure the spaces indicated by arrows from the wall, ceiling fence, or other obstacles.**
- **Indoor unit of this room air conditioner shall be installed on the wall in a height of at least 2.3 m.**

OUTDOOR UNIT

- **If an awning is built over the unit to prevent direct sunlight or rain, be careful that heat radiation from the condenser is not obstructed.**
- **There should not be any animal or plant which could be affected by**

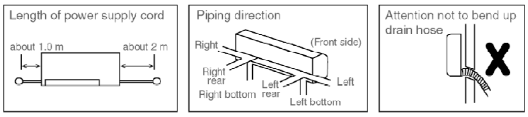
hot discharged air.

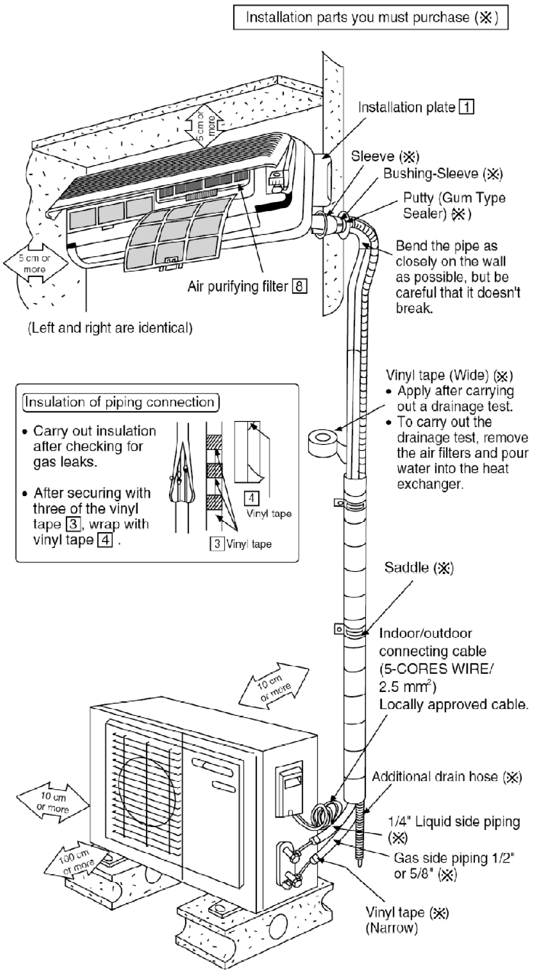
- **Keep the spaces indicated by arrows from wall, ceiling, fence or other obstacles.**
- **Do not place any obstacles which may cause a short circuit of the discharged air.**
- **If piping length is over 10m, additional refrigerant should be added as shown in the table.**

Model	Pipe size		Max. Piping Length A (m)	Max. Elevation B (m)	Rated		Additional Refrigerant (g/m)
	Gas	Liquid			Length (m)	Elevation (m)	
A182KR	1/2”	1/4”	25	20	7.5	5	20
A242KR	5/8”	1/4”	25	20	7.5	5	30

Example: For A242KR / If the unit will be installed at a 12m distance, the quantity of additional refrigerant should be 60g...(12-10)m × 30g/m = 60g

Indoor/Outdoor unit installation diagram


Length of power supply cord
about 1.0 m
about 2 m
Piping direction
Right
(Front side)
Right rear
Right bottom
Left rear
Left
Left bottom
Attention not to bend up drain hose
X


Installation parts you must purchase (※)
Installation plate 1
Sleeve (※)
Bushing-Sleeve (※)
Putty (Gum Type Sealer) (※)
Bend the pipe as closely on the wall as possible, but be careful that it doesn't break.
5 cm or more
5 cm or more
Air purifying filter 8
(Left and right are identical)
Vinyl tape (Wide) (※)
• Apply after carrying out a drainage test.
• To carry out the drainage test, remove the air filters and pour water into the heat exchanger.
Insulation of piping connection
• Carry out insulation after checking for gas leaks.
• After securing with three of the vinyl tape 3, wrap with vinyl tape 4 .
4 Vinyl tape
3 Vinyl tape
Saddle (※)
Indoor/outdoor connecting cable (5-CORES WIRE/ 2.5 mm²) Locally approved cable.
10 cm or more
10 cm or more
100 cm or more
Additional drain hose (※)
1/4" Liquid side piping (※)
Gas side piping 1/2" or 5/8" (※)
Vinyl tape (※) (Narrow)

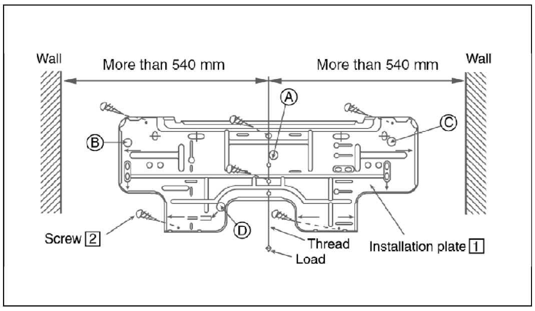
- This illustration is for explanation purposes only. / The indoor unit will actually face a different way.

10.2. INDOOR UNIT

10.2.1. SELECT THE BEST LOCATION / (Refer to "Select the best location" section)

10.2.2. HOW TO FIX INSTALLATION PLATE

The mounting wall is strong and solid enough to prevent it from the vibration.


Wall
More than 540 mm
More than 540 mm
Wall
Ⓐ
Ⓑ
Ⓒ
Ⓓ
Screw 2
Thread
Load
Installation plate 1

Ⓐ : Unit centre should be at more than 540 mm at right and left.
The height should be more than 195 mm from the ceiling.
Ⓑ : From installation plate end to unit left side end is 40 mm.
Ⓒ : From installation plate end to unit right side end is 50 mm.
Ⓓ : Connecting cable should be about 750 mm from this line. (Only for left rear piping)

1. Mount the installation plate on the wall with 6 screws. / (If mounting the unit on the concrete wall, consider using anchor bolts.)
    - Always mount the installation plate horizontally by aligning the marking-off line with the thread and using a level gauge.
2. Drill the piping plate hole with ø70 mm hole-core drill.
    - Line according to the arrows marked on the lower left and right side of the installation plate. The meeting point of the extended line is the centre of the hole.
    - Drill the piping hole at either the right or the left and the hole should be slightly slant to the outdoor side.

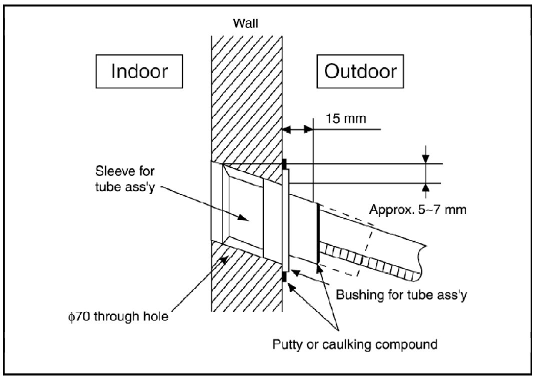
10.2.3. TO DRILL A HOLE IN THE WALL AND INSTALL A SLEEVE OF PIPING

1. Insert the piping sleeve to the hole.
2. Fix the bushing to the sleeve.
3. Cut the sleeve until it extrudes about 15 mm from the wall.

Caution

When the wall is hollow, please be sure to use the sleeve for tube ass’y to prevent dangers caused by mice biting the connecting cable.

4. Finish by sealing the sleeve with putty or caulking compound at the final stage.


Wall
Indoor
Outdoor
15 mm
Sleeve for tube ass'y
Approx. 5~7 mm
Bushing for tube ass'y
ϕ70 through hole
Putty or caulking compound

10.2.4. INDOOR UNIT INSTALLATION

1. For the right rear piping

Pull out the Indoor piping

Install the Indoor Unit

Secure the Indoor Unit

Insert the connecting cable

2. For the right and right bottom piping

Pull out the Indoor piping

Install the Indoor Unit

Insert the connecting cable

Secure the Indoor Unit

3. For the embedded piping

Exchange the drain hose and the cap

Bend the embedded piping

- Use a spring bender or equivalent to bend the piping so that the piping is not crushed.

Install the Indoor Unit

Cut and flare the embedded piping

- When determining the dimensions of the piping, slide the unit all the way to the left on the installation plate.
  Refer to the section "Cutting and flaring the piping".

Pull the connecting cable into Indoor Unit

- The inside and outside connecting cable can be connected without removing the front grille.

Connect the piping

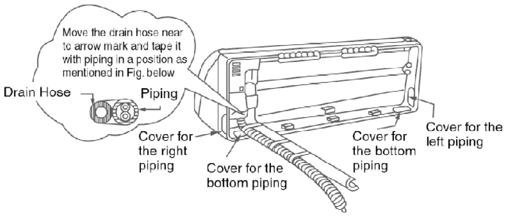
- Please refer to "Connecting the piping" column in outdoor unit section. (Below steps are done after connecting the outdoor piping and gas-leakage confirmation.)

Insulate and finish the piping

- Please refer to "Piping and finishing" column of outdoor section and "Insulation of piping connections" column as mentioned in Indoor/ Outdoor Unit Installation diagram.

Secure the Indoor Unit

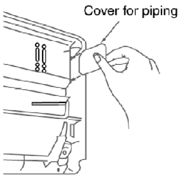
Pull out the piping and drain hose


Move the drain hose near to arrow mark and tape it with piping in a position as mentioned in Fig. below
Drain Hose
Piping
Cover for the right piping
Cover for the bottom piping
Cover for the bottom piping
Cover for the left piping

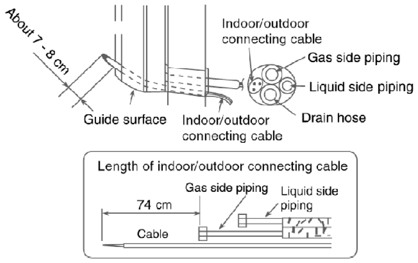
How to keep the cover

In case of the cover is cut, keep the cover at the rear of chassis as shown in the illustration for future reinstallation.

(Left, right and bottom covers for piping)

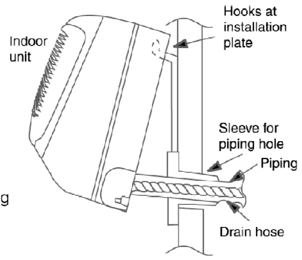

Cover for piping

Insert the indoor/outdoor connecting cable


About 7 - 8 cm
Indoor/outdoor connecting cable
Gas side piping
Liquid side piping
Drain hose
Guide surface
Indoor/outdoor connecting cable
Length of indoor/outdoor connecting cable
Gas side piping
Liquid side piping
74 cm
Cable

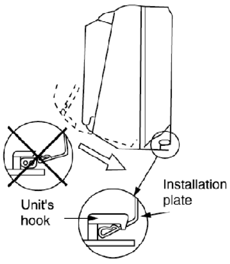
Install the indoor unit

Hook the indoor unit onto the upper portion of installation plate. (Engage the indoor unit with the upper edge of the installation plate). Ensure the hooks are properly seated on the installation plate by moving it in left and right.

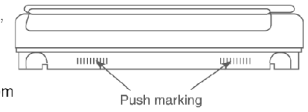

Indoor unit
Hooks at installation plate
Sleeve for piping hole
Piping
Drain hose

Secure the indoor unit

1. Tape the extra power supply cord in a bundle and keep it behind the chassis.
2. Press the lower left and right side of the unit against the installation plate until hooks engages with their slots (sound click).


Installation plate
Unit's hook

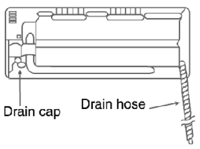
In case to take out the unit, push the PUSH marking on the unit bottom, and pull it slightly towards you to disengage the hooks from the unit.

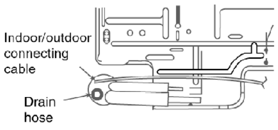

Push marking

(This can be used for left rear piping and left bottom piping also)

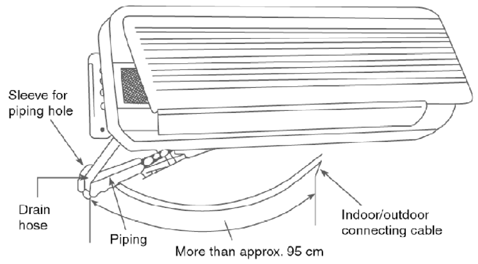
Exchange the drain hose and the cap

Refer view for left piping installation

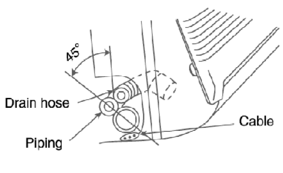

Drain cap
Drain hose


Indoor/outdoor connecting cable
Drain hose

Adjust the piping slightly downwards.

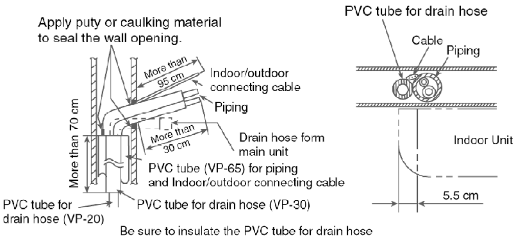

Sleeve for piping hole
Drain hose
Piping
More than approx. 95 cm
Indoor/outdoor connecting cable

- In case of left piping how to insert the indoor/outdoor connecting cable and drain hose.


45°
Drain hose
Piping
Cable

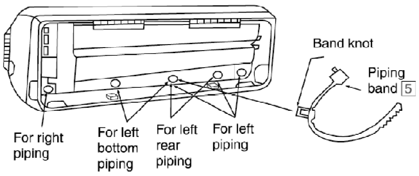
(For the right piping, follow the same procedure)

- In case of the embedded piping, how to pull the piping and drain hose out.

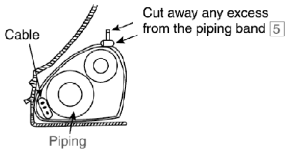

Apply puty or caulking material
to seal the wall opening.
More than 95 cm
Indoor/outdoor connecting cable
Piping
More than 30 cm
Drain hose form main unit
More than 70 cm
PVC tube (VP-65) for piping and Indoor/outdoor connecting cable
PVC tube for drain hose (VP-20)
PVC tube for drain hose (VP-30)
Be sure to insulate the PVC tube for drain hose
PVC tube for drain hose
Cable
Piping
Indoor Unit
5.5 cm

ATTACHMENT OF THE PIPING BAND

- For the right rear piping, it is not necessary to use piping band. The piping band can be attached when the extension flare pipe is used or when doing the piping work (under condition as shown in the diagram below) on the floor.
- The location to attach the piping band change according to the direction of the piping. Press the band knot to the hole in order to fix the band as shown in diagram below.


Band knot
Piping band 5
For right piping
For left bottom piping
For left rear piping
For left piping

- Tighten the band so that the cable and the piping are secure. Be sure to cut any excess from the piping band (failure to cut away the excess piping band may produce abnormal noise during operation or condensation).


Cut away any excess from the piping band 5
Cable
Piping

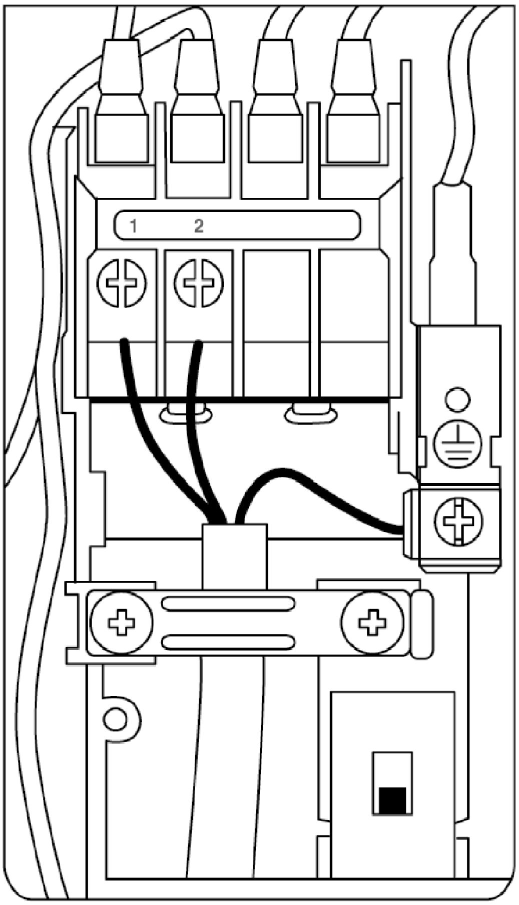
10.2.5. CONNECT THE CABLE TO THE INDOOR UNIT

1. **The inside and outside connecting cable can be connected without removing the front grille.**
2. **Connecting cable between indoor unit and outdoor unit shall be approved polychloroprene sheathed 5 × 2.5 mm2 flexible cord, type designation H05 RN-F or heavier cord.**

- Ensure the color of wires of outdoor unit and the terminal Nos. are the same to the indoor’s respectively.

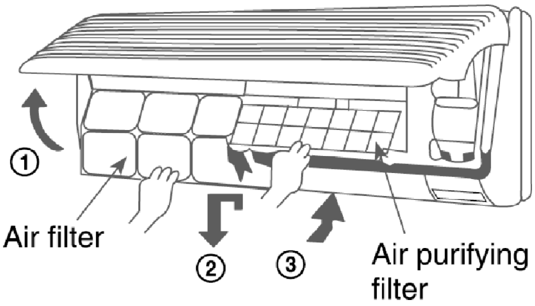
Terminals on the indoor unit	1	2	3	4	⏚
Color of wires	░	▒	▓	▓	█
Terminals on the outdoor unit	1	2	3	4	⏚

- Secure the cable onto the control board with the holder (clamper).



INSTALLATION OF AIR PURIFYING FILTERS

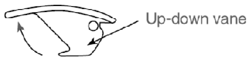
1. **Open the front panel.**
2. **Remove the air filters.**
3. **Hold the purifying filters by their tabs and install as shown in the illustration at below.**


①
Air filter
②
③
Air purifying filter

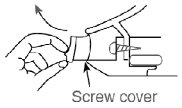
HOW TO TAKE OUT FRONT GRILLE

Please follow below steps to take out front grille if necessary such as when servicing. Remove the Grille from the chassis.

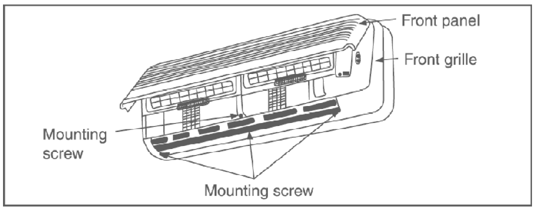
1. Set the up-and-down air direction louver to open position (horizontally) by finger pressure.



2. Open the three screw covers as shown in the illustration below.



3. Remove the three mounting screws. (Refer Diagram below)
4. Open the front panel and remove a mounting screw at the centre. (Refer Diagram below)
5. To remove the Grille, pull the lower left and right side of the grille towards you (slightly tilted) and lift it straight upwards (Two tabs on the top inside edge of the grille are clear of their slots).

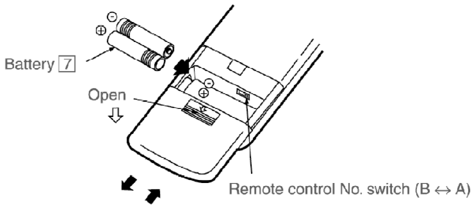


When reinstalling the front grille, first set the vertical airflow direction louver to the horizontal position and then carry out above steps 2 ~ 5 in the reverse order.

REMOTE CONTROL NO. SWITCH

1. When installing two air conditioners in one room, each air conditioner can be synchronized to the remote controller.

2. In order to operate separately, open the rear cover of one of the remote controller and set the switch to “B”.
3. Also, set the remote control No. switch to “B” in the corresponding indoor unit. / (The switch is located in the control box-sub. of the indoor unit.)



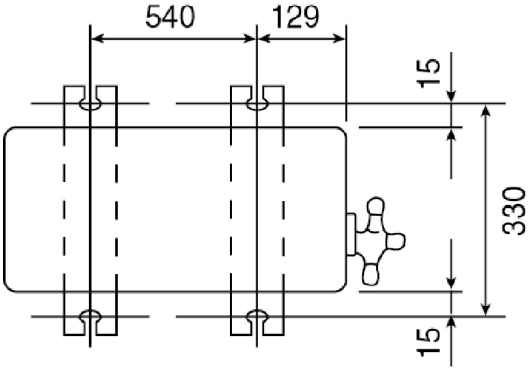
10.3. OUTDOOR UNIT

10.3.1. SELECT THE BEST LOCATION / (Refer to “Select the best location” section)

10.3.2. INSTALL THE OUTDOOR UNIT

- After selecting the best location, start installation according to Indoor/Outdoor Unit Installation Diagram.

1. Fix the unit on concrete or rigid frame firmly and horizontally by bolt nut. (ø10 mm).
2. When installing at roof, please consider strong wind and earthquake. Please fasten the installation stand firmly with bolt or nails.

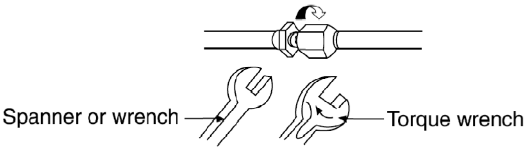


10.3.3. CONNECTING THE PIPING

Connect Piping to Indoor

Please make flare after inserting flare nut (locate at joint portion of tube assembly) onto the copper pipe. (In case of using long piping)
Connect the piping

- **Align the center of piping and sufficiently tighten the flare nut with fingers.**
- **Further tighten the flare nut with torque wrench in specified torque as stated in the table.**

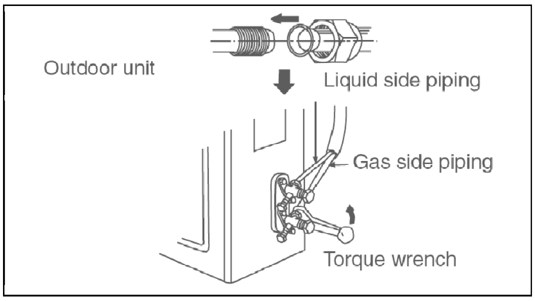

Spanner or wrench
Torque wrench

Model	Pipe size	Torque
A182KR, A242KR	**Liquid Side 1/4”**	**18 N.m**
A182KR	**Gas Side 1/2”**	**55 N.m**
A242KR	**Gas Side 5/8”**	**65 N.m**

Connecting the Piping to Outdoor Unit

1. **Align the center of the piping and sufficiently tighten the flare nut with fingers.**
2. **Finally, tighten the flare nut with torque wrench until the wrench clicks.**

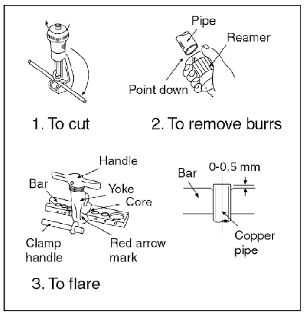
    - **When tightening the flare nut with torque wrench, ensure the direction for tightening follows the arrow on the wrench.**

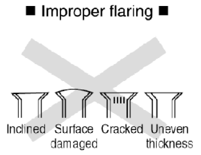

Outdoor unit
Liquid side piping
Gas side piping
Torque wrench

CUTTING AND FLARING THE PIPING

1. **Please cut using pipe cutter and then remove the burrs.**
2. **Remove the burrs by using reamer. If burrs is not removed, gas leakage may be caused.**
   Turn the piping end down to avoid the metal powder entering the pipe.

3. Please make flare after inserting the flare nut onto the copper pipes.


Pipe
Reamer
Point down
1. To cut
2. To remove burrs
Handle
Bar
Yoke
Core
Clamp handle
Red arrow mark
Bar
0-0.5 mm
Copper pipe
3. To flare

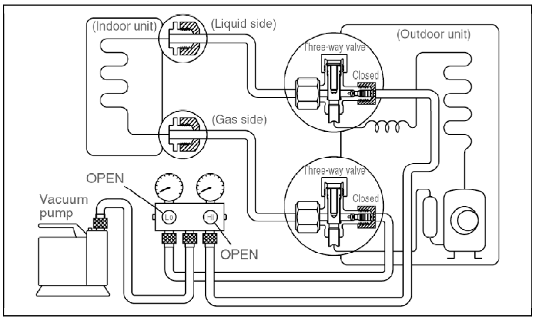

■ Improper flaring ■
Inclined
Surface damaged
Cracked
Uneven thickness

When properly flared, the internal surface of the flare will evenly shine and be of even thickness. Since the flare part comes into contact with the connectors, carefully check the flare finish.

10.3.4. EVACUATION OF THE EQUIPMENT

WHEN INSTALLING AN AIR CONDITIONER, BE SURE TO EVACUATE THE AIR INSIDE THE INDOOR UNIT AND PIPES in the following procedure.

If air remains in the indoor unit and refrigeration pipes, it will affect the compressor, reduce to cooling capacity, and could lead to a malfunction.


(Indoor unit)
(Liquid side)
(Outdoor unit)
Three-way valve
Closed
(Gas side)
Three-way valve
Closed
OPEN
Vacuum pump
Lo
Hi
OPEN

SERVICE PORT CAP

Be sure, using a torque wrench to tighten the service port cap (after using the service port), so that it prevents the gas leakage from the refrigeration cycle.

Procedure:

1. Connect a charging hose with a push pin to the Low and High sides of a charging set and the service port of a 3-way valves.

- Be sure to connect the end of the charging hose with the push pin to the service port.

2. Connect the center hose of the charging set to a vacuum pump.

3. Turn on the power switch of the vacuum pump and make sure

that the needle in the gauge moves from 0 cmHg (0 MPa) to -76 cmHg (-0.1 MPa). Then evacuate the air approximately ten minutes.

4. **Close the valve of both the Low and High sides of the charging set and turn off the vacuum pump. Make sure that the needle in the gauge does not move after approximately five minutes.**
   Note: BE SURE TO TAKE THIS PROCEDURE IN ORDER TO AVOID REFRIGERANT GAS LEAKAGE.
5. **Disconnect the charging hose from the vacuum pump and from the service port of both of the 3-way valve.**
6. **Tighten the service port caps of the 3-way valve at torque of 18 N.m with a torque wrench.**
7. **Remove the valve caps of both of the 3-way valve. Position both of the valves to "OPEN" using a hexagonal wrench (4 mm).**
8. **Mount valve caps onto both of the 3-way valves.**

- Be sure to check for gas leakage.

CAUTION

- If gauge needle does not move from 0 cmHg (0 MPa) to -76 cmHg (-0.1 MPa), in step 3 above, take the following measure:

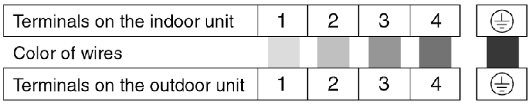
- If the leaks stop when the piping connections are tightened further, continue working from step 3.

- If the leaks do not stop when the connections are retightened, repair the location of leak.

10.3.5. CONNECT THE CABLE TO THE OUTDOOR UNIT

(FOR DETAIL REFER TO WIRING DIAGRAM AT UNIT)

1. **Remove the control board cover from the unit by loosening the screw.**
2. **Connecting cable between indoor unit and outdoor unit shall be approved polychloroprene sheathed 5 × 2.5 mm^2 flexible cord, type designation H05 RN-F or heavier cord.**



Terminals on the indoor unit	1	2	3	4	⏚
Color of wires	░	▒	▓	▓	█
Terminals on the outdoor unit	1	2	3	4	⏚

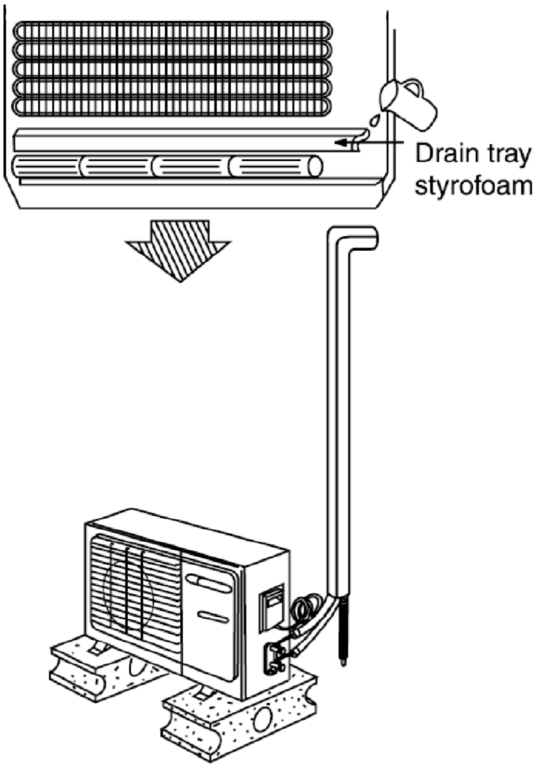
3. Secure the cable onto the control board with the holder (clamper).
4. Attach the control board cover to the original position with the screw.

10.3.6. PIPE INSULATION

1. Please carry out insulation at pipe connection portion as mentioned in Indoor/Outdoor Unit Installation Diagram. Please wrap the insulated piping end to prevent water from going inside the piping.
2. If drain hose or connecting piping is in the room (where dew may form), please increase the insulation by using POLY-E FOAM with thickness 6 mm or above.

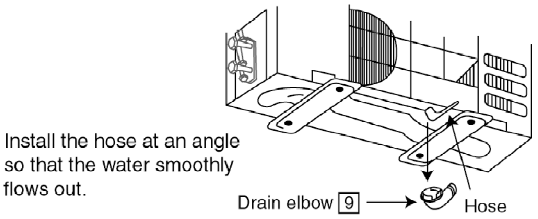
CHECK THE DRAINAGE

- Pour a glass of water into drain tray.
- Ensure if water flows out from drain hose of indoor unit.



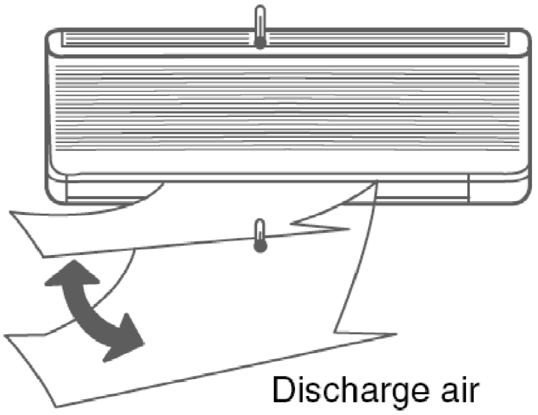
DISPOSAL OF OUTDOOR UNIT DRAIN WATER

- If a drain elbow is used, the unit should be placed on a stand which is taller than 3 cm.
- If the unit is used in an area where temperature falls below 0°C for 2 or 3 days in succession, it is recommended not to use a drain elbow, for the drain water freezes and the fan will not rotate.


Install the hose at an angle so that the water smoothly flows out.
Drain elbow 9
Hose

EVALUATION OF THE PERFORMANCE

- Operate the unit at cooling operation mode for fifteen minutes or more.
- Measure the temperature of the intake and discharge air.
- Ensure the difference between the intake temperature and the discharge is more than 8°C.


Discharge air

CHECK ITEMS

☐ **Is there any gas leakage at flare nut connection?**

☐ **Has the heat insulation been carried out at flare nut connection?**

☐ **Is the indoor/outdoor connecting cable being fixed to terminal board firmly?**

☐ **Is the indoor/outdoor connecting cable being clamped firmly?**

☐ **Is the drainage OK?**
(Refer to “Check the drainage” section)

☐ **Is the earth wire connection properly done?**

☐ **Is the indoor unit properly hooked to the installation plate?**

☐ **Is the power supply voltage complied with rated value?**

☐ **Is there any abnormal sound?**

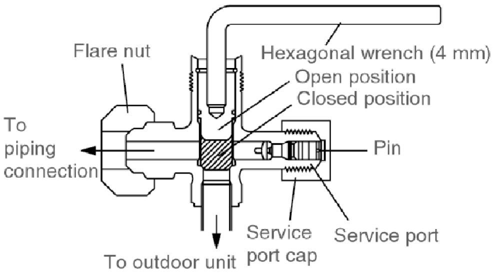
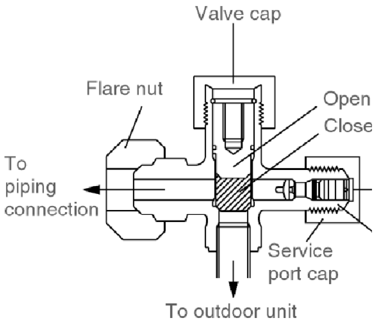
☐ **Is the cooling operation normal?**

☐ **Is the thermostat operation normal?**

☐ **Is the remote control’s LCD operation normal?**

☐ **Is the air purifying filter installed?**

11. 3-way Valve

	3-way Valve (Liquid Side)		3-way Valve (Gas Side	
	 Flare nut Hexagonal wrench (4 mm) Open position Closed position To piping connection Pin Service port cap Service port To outdoor unit		 Valve cap Flare nut Open Close To piping connection Service port cap To outdoor unit	
Works	**Shaft Position**	**Service Port**	**Shaft Position**	**Servic**
Shipping	**Closed (With valve cap)**	**Closed (With cap)**	**Closed (With valve cap)**	**Clo (With**
Evacuation (Installation and Re-installation)	**Closed (Clockwise)**	**Open (Connected manifold gauge w/charging cylinder)**	**Closed (Clockwise)**	**Op (Pusl**
Operation	**Open (With valve cap)**	**Closed (With cap)**	**Open (With valve cap)**	**Clo (With**
Pumping down (Transferring)	**Closed (Clockwise)**	**Closed (With cap)**	**Open (Counter-Clockwise)**	**Op (Conn manifol**
Evacuation (Servicing)	**Open (Counter-clockwise)**	**Open (Connected manifold gauge)**	**Open (Counter-clockwise)**	**Op (Conn manifol**
Gas charging (Servicing)	**Open (Counter-clockwise)**	**Open (Connected manifold gauge)**	**Open (Counter-clockwise)**	**Op (Conn manifol**
Pressure check	**Open**	**Open**	**Open**	**Op**

	3-way Valve (Liquid Side)		3-way Valve (Gas Side	
(Servicing)	(Counter-clockwise)	(Connected manifold gauge)	(Counter-clockwise)	(Conn manifol
Gas releasing (Servicing)	Open (Counter-clockwise)	Open (Connected manifold gauge)	Open (Counter-clockwise)	Op (Conn manifol

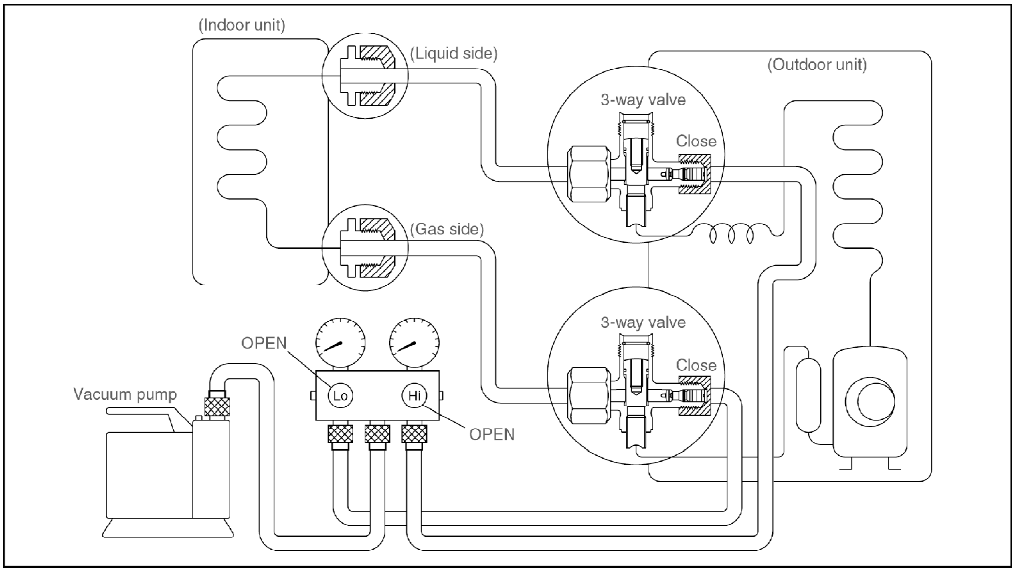
11.1. Evacuation of Installation

When installing an air conditioner, be sure to evacuate the air inside the indoor unit and pipes in the following procedure.

Required tools:

hexagonal wrench, adjustable wrench, torque wrenches, wrench to hold the joints, gas leak detector, and charging set.

The air in the indoor unit and in the piping must be purged. If air remains in the refrigeration pipings, it will affect the compressor, reduce the cooling capacity, and could lead to a malfunction.



Service port cap

Be sure, using a torque wrench to tighten the service port cap (after using the service port), so th prevents the gas leakage from the refrigeration cycle

Procedure:

1. Connect a charging hose with a push pin to the Low and High

sides of a charging set and the service ports of a 3-way valves.

- Be sure to connect the end of the charging hose with the push pin to the service port.

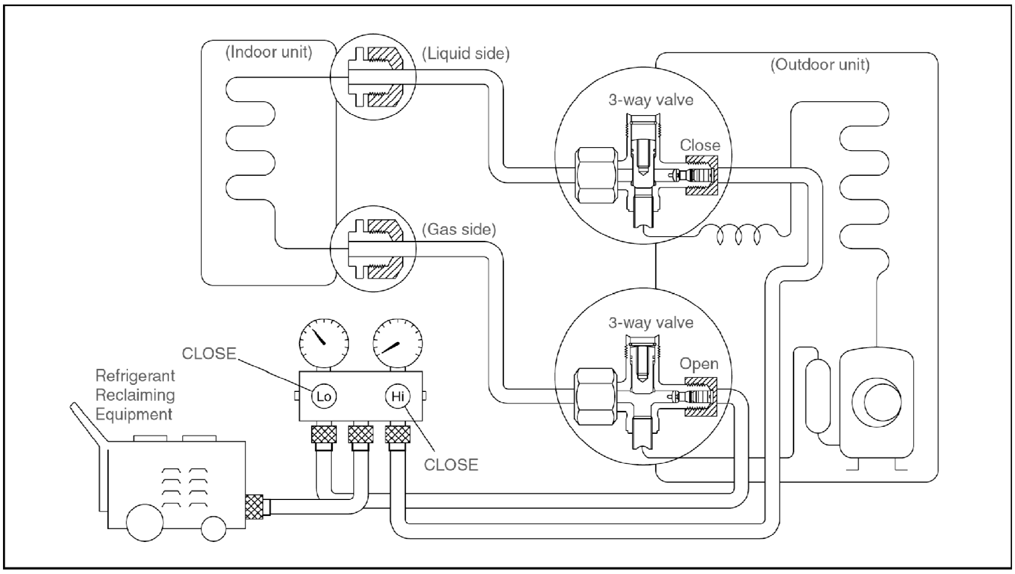
2. Connect the centre hose of the charging set to a vacuum pump.
3. Turn on the power switch of the vacuum pump and make sure that the needle in the gauge moves from 0 cmHg (0 MPa) to -76 cmHg (-0.1 MPa). Then evacuate the air for approximately 10 minutes.
4. Close the valve of both the Low and High sides of the charging set and turn off the vacuum pump. Make sure that the needle in the gauge does not move after approximately 5 minutes.
   BE SURE TO TAKE THIS PROCEDURE IN ORDER TO AVOID REFRIGERANT GAS LEAKAGE.
5. Disconnect the charging hose from the vacuum pump and from the service ports of the 3-way valves.
6. Tighten the service port caps of both the 3-way valves at a torque of 18 N.m with a torque wrench.
7. Remove the valve caps of both the 3-way valves. Position both of the valves to “open” using a hexagonal wrench (4 mm).
8. Mount the valve caps onto both of the 3-way valves.

- Be sure to check for gas leakage.

Caution

If gauge needle does not move from 0 cmHg (0 MPa) to -76 cmHg (-0.1 MPa) in step (3) above, take the following measures:
If the leaks stop when the piping connections are tightened further, continue working from step (3).
If the leaks do not stop when the connections are retightened, repair the location of the leak.

11.2. Pumping down


(Indoor unit)
(Liquid side)
(Outdoor unit)
3-way valve
Close
(Gas side)
3-way valve
Open
CLOSE
Refrigerant
Reclaiming
Equipment
Lo
Hi
CLOSE

Procedure:

1. Confirm that both the 3-way valves are set to the open position.
   - Remove the valve stem caps and confirm that the valve stems are in the open position.
   - Be sure to use a hexagonal wrench to operate the valve stems.
2. Operate the unit for 10 to 15 minutes.
3. Stop operation and wait for 3 minutes, then connect the charge set to the service port of the 3-way valve.
   - Connect the charge hose with the push pin to the Gas side service port.
4. Air purging of the charge hose.
   - Open the low-pressure valve on the charge set slightly to purge air from the charge hose.
5. Set the Liquid side 3-way valve to the close position.
6. Operate the air conditioner at the cooling cycle and stop it when the gauge indicates 0 kg/cm$_2$G (0 MPa).
   - If the unit cannot be operated at the cool condition (weather is rather cool), press the Pump Down Switch on the Indoor

unit.

- So that the unit can be operated.

7. Immediately set gas side 3-way valve to the close position.

   - Do this quickly so that the gauge ends up indicating 1 to 3 kg/ cm_2G (0.1 MPa to 0.3 MPa).

8. Use refrigerant reclaiming equipment to collect refrigerant from indoor unit and pipes.

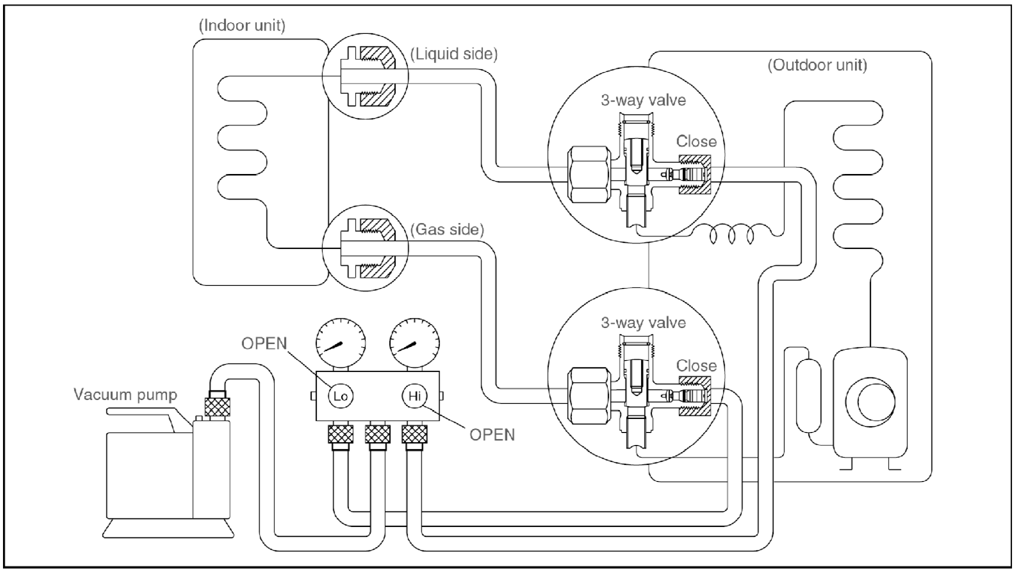
9. Disconnect the charge set, and mount both the 3-way valve's stem nuts and the service port caps.

   - Use a torque wrench to tighten the service port cap to a torque of 18 N.m.
   - Be sure to check for gas leakage.

10. Disconnect pipes from indoor unit and outdoor unit.

11.3. Evacuation of Re-installation

WHEN RE-INSTALLING AN AIR CONDITIONER, BE SURE TO EVACUATE THE AIR INSIDE THE INDOOR UNIT AND PIPES in the following procedure.
If air remain in the indoor unit and refrigeration pipes, it will affect the compressor, reduce to cooling capacity, and could lead to a malfunction.


(Indoor unit)
(Liquid side)
(Outdoor unit)
3-way valve
Close
(Gas side)
3-way valve
Close
OPEN
Vacuum pump
Lo
Hi
OPEN

Procedure:

1. **Connect a charging hose with a push pin to the Low and High sides of a charging set and the service port of the 3-way valve.**

   - **Be sure to connect the end of the charging hose with the push pin to the service port.**

2. **Connect the centre hose of the charging set to a vacuum pump.**
3. **Turn on the power switch of the vacuum pump and make sure that the needle in the gauge moves from 0 cmHg (0 MPa) to -76 cmHg (-0.1 MPa). Then evacuate the air for approximately 10 minutes.**
4. **Close the valve of both Low side and High side of the charging set and turn off the vacuum pump. Make sure that the needle in the gauge does not move after approximately 5 minutes.**
   BE SURE TO TAKE THIS PROCEDURE IN ORDER TO AVOID REFRIGERANT GAS LEAKAGE.
5. **Disconnect the charging hose from the vacuum pump.**
6. **Charge the pipes and indoor unit with gas refrigerant from liquid (High) side 3-way valve service port and then discharge the refrigerant until gas (Low) side gauge needle indicates 3 kg/cm^2 (0.3 MPa).**

   - **BE SURE TO USE REFRIGERANT RECLAIMING EQUIPMENT WHILE DISCHARGING THE REFRIGERANT.**
   - **Purge the air from charge set's centre hose.**
   - **Be sure to check for gas leakage.**

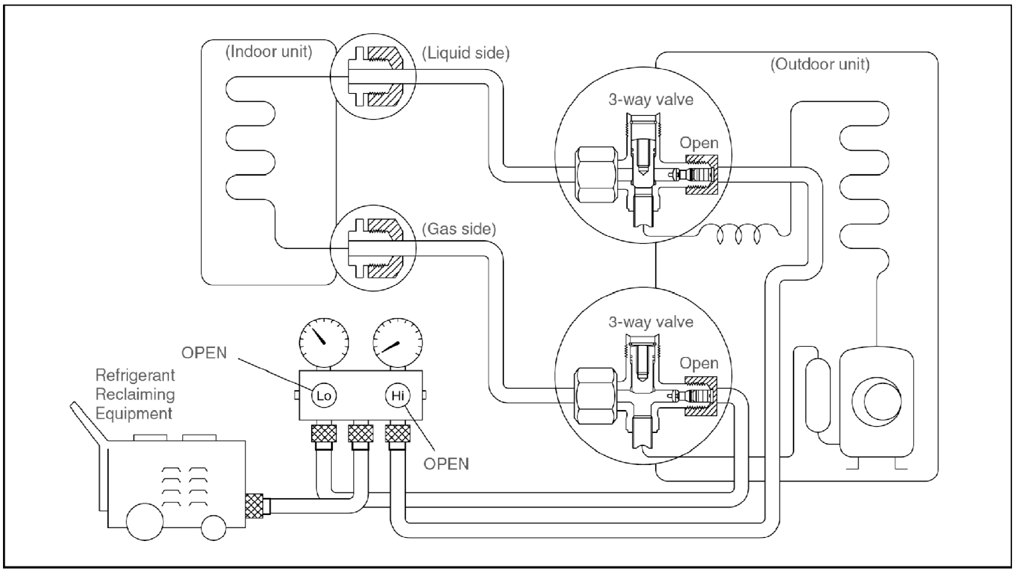
Caution

If gauge needle does not move from 0 cmHg (0 MPa) to -76 cmHg (-0.1 MPa) in step (3) above, take the following measures:
If the leaks stop when the piping connections are tightened further, continue working from step 3.
If the leaks do not stop when the connections are retightened, repair the location of the leak.

7. **Tighten the service port caps of both the 3-way valves at a torque of 18 N.m with a torque wrench.**
8. **Remove the valve caps of both the 3-way valves. Position both of the valves to “open” using a hexagonal wrench (4 mm).**
9. **Mount valve caps onto the 3-way valves.**

11.4. Balance refrigerant of the 3-way valves

(Lack of refrigerant in the refrigeration cycle)


(Indoor unit)
(Liquid side)
(Outdoor unit)
3-way valve
Open
(Gas side)
3-way valve
Open
OPEN
Refrigerant
Reclaiming
Equipment
Lo
Hi
OPEN

Procedure:

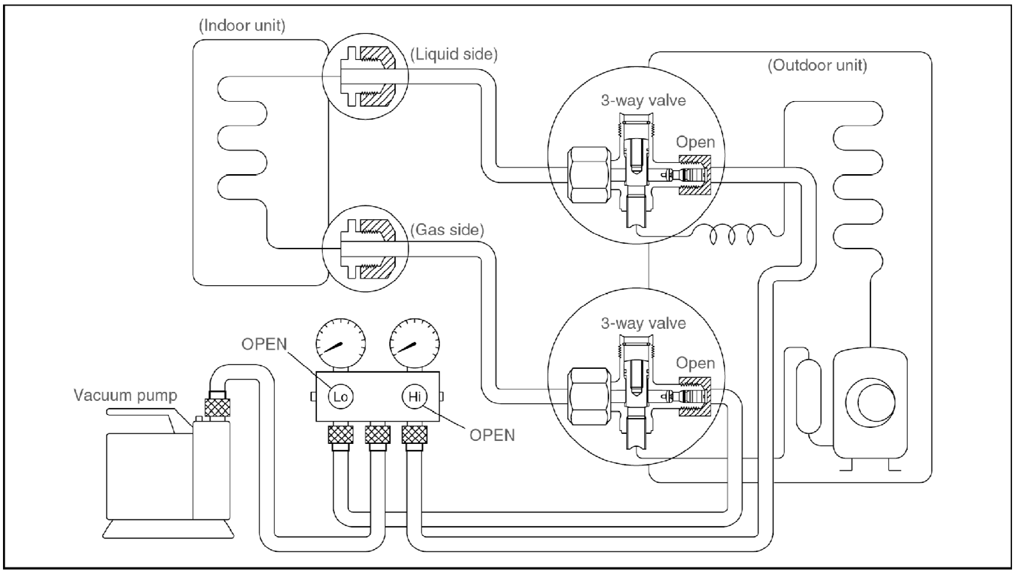
1. **Confirm that both the 3-way valves are set to the opened position.**
2. **Connect the charge set to the 3-way valve’s service port.**

- Leave the valve on the charge set closed.
- Connect the charge hose with the push-pin to the service port.
- Confirm whether the pressure indicates more than 0.1 MPa (1 kg/cm^{2}G).

3. Connect the charge set's centre hose to refrigerant reclaiming equipment.
4. Open the valve (Low side) on the charge set and loosen the hose connected with the Refrigerant Reclaiming Equipment to purge the air from the hose.
5. Turn on refrigerant reclaiming equipment to collect the refrigerant until the needle indicates 0 (no refrigerant is remaining).

11.5. Evacuation

(No refrigerant in the refrigeration cycle)


(Indoor unit)
(Liquid side)
(Outdoor unit)
3-way valve
Open
(Gas side)
3-way valve
Open
OPEN
Vacuum pump
Lo
Hi
OPEN

Procedure:

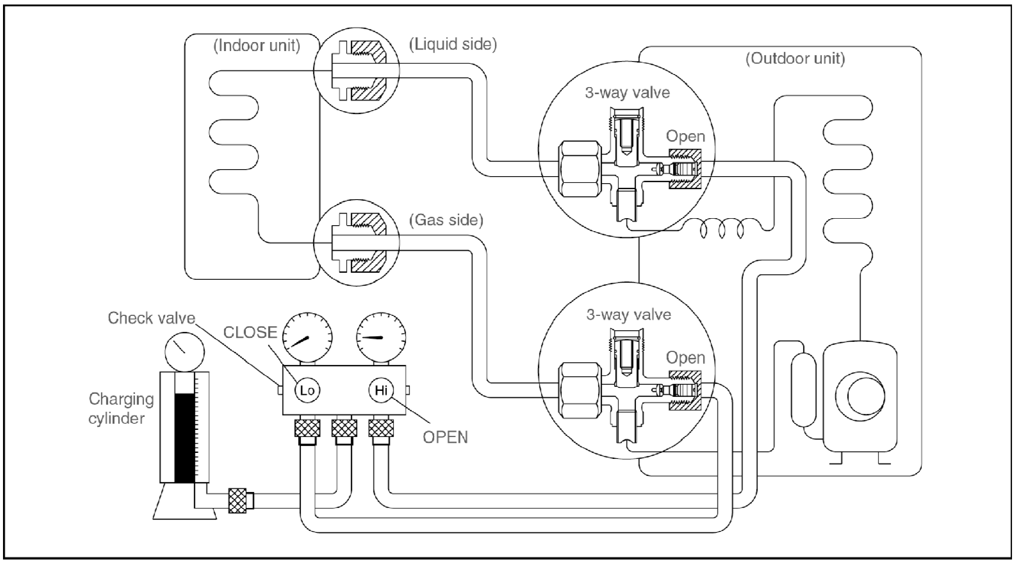
1. Connect the vacuum pump to the charge set's centre hose.
2. Turn on the vacuum pump to evacuate the unit.

- Confirm that the gauge needle has moved toward -76 cmHg (-0.1 MPa).
- Apply the vacuum for approximately 1 hour (vacuum of 4 mmHg or less).

3. Close the valves (Low side and High side) on the charge set, turn off the vacuum pump, and confirm that the gauge needle does not move (approximately 5 minutes after the vacuum pump is turned off).
4. Disconnect the charge hose from the vacuum pump.

11.6. Gas charging

(After Evacuation)


(Indoor unit)
(Liquid side)
(Outdoor unit)
3-way valve
Open
(Gas side)
Check valve
CLOSE
3-way valve
Open
Charging cylinder
Lo
Hi
OPEN

Procedure:

1. Connect the charge hose to the charging cylinder.

   - Connect the charge hose which you disconnected from the vacuum pump to the valve at the bottom of the cylinder.

2. Purge the air from the charge hose.

   - Open the valve at the bottom of the cylinder and use a screwdriver to press the check valve on the charge set to purge the air (be careful of the liquid refrigerant).

3. Open the High side on the charge set and charge the refrigerant to the unit.

   - Be sure to open only the High side valve on the charge set to charge the system from the liquid-side (high-presure) pipe. (If the system cannot be charged with the specified amount of

refrigerant, operate the compressor until the specified amount can be charged, and then close the valve at the bottom of the charge cylinder.)

4. **Immediately disconnect the charge hoses from both 3-way valve service ports.**
5. **Mount the valve stem nuts and the service port caps onto the 3-way valves.**
   - **Use torque wrench to tighten the service port caps to a torque of 18 N.m.**
   - **Be sure to check for gas leakage.**

12. Servicing Information

(A) Disassembly of the parts (Indoor Unit)

- Inspection points for the Indoor Electronic Controller

1. **The Electronic Controller, a signal Receiver and an Indicator can be seen by removing the Front Grille and Control Board Cover, as shown in the Fig. 1.**

- Indoor Fan Motor removal procedure:-

1. **Remove the connector CN-MTR (GREEN) of Fan Motor and connector CN-STM (GREEN) of stepping motor from the electronic controller. Release the earth wire (YELLOW-GREEN) from the control board terminal and sensors from its holders. (Refer Fig. 2.)**
2. **Remove the Control Board.**
   As shown in Fig. 3, remove the 3 screws and release the tab at the top of Control Board. Pull the Control Board forward slightly. Caution: Removal of Discharge Grille before removing the control board is necessary to avoid damaging other parts.

Fig. 1

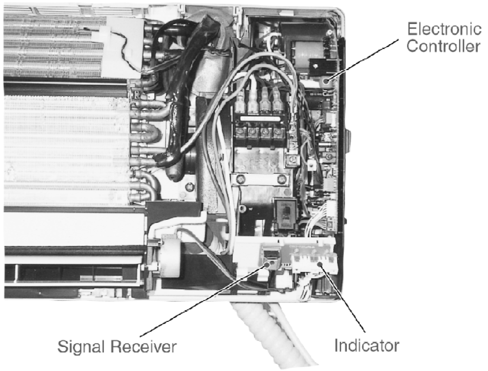

Electronic
Controller
Signal Receiver
Indicator

Fig. 2

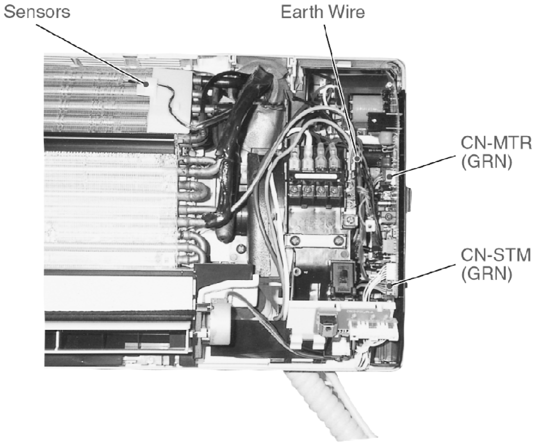
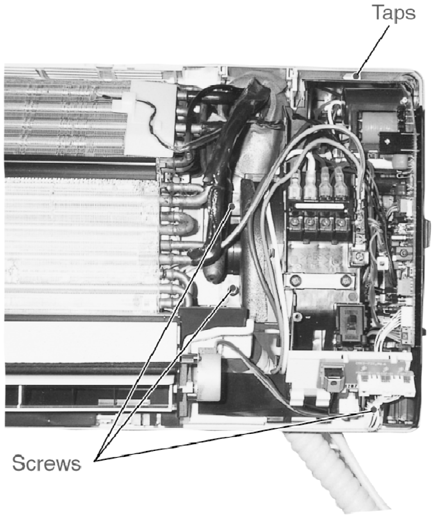

Sensors
Earth Wire
CN-MTR
(GRN)
CN-STM
(GRN)

Fig. 3


Taps
Screws

3. Remove the Discharge Grille.
Remove the Discharge Grille and then pull the Discharge Grille in a down and forward direction.

4. Remove the Indoor Fan Motor.
Loosen the Fan Mounting Screw at the junction with Cross Flow Fan.

Remove the screw that hold the metal plate and remove the metal plate.

Pull off the Bearing at the left of the Cross Flow Fan and remove the Indoor Fan motor.

Fig. 4

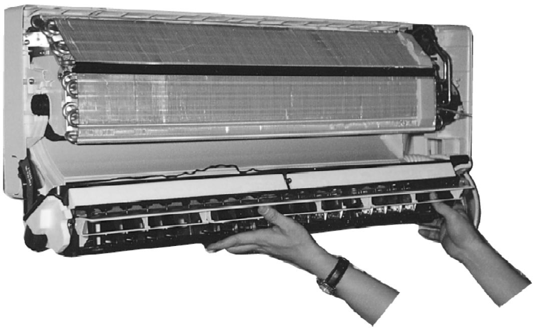


Fig. 5

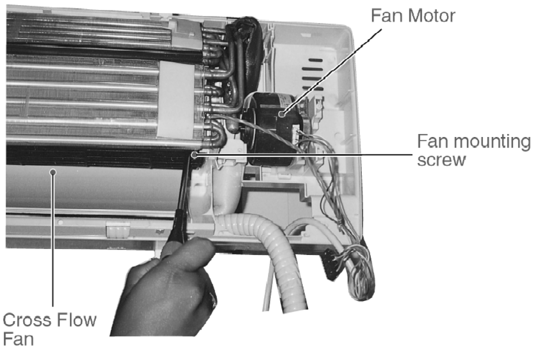

Fan Motor
Fan mounting screw
Cross Flow Fan

Fig. 6

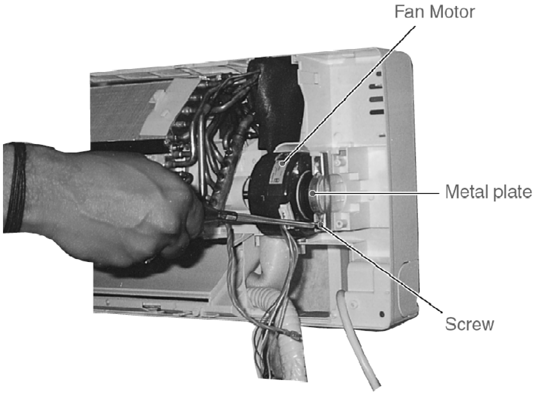
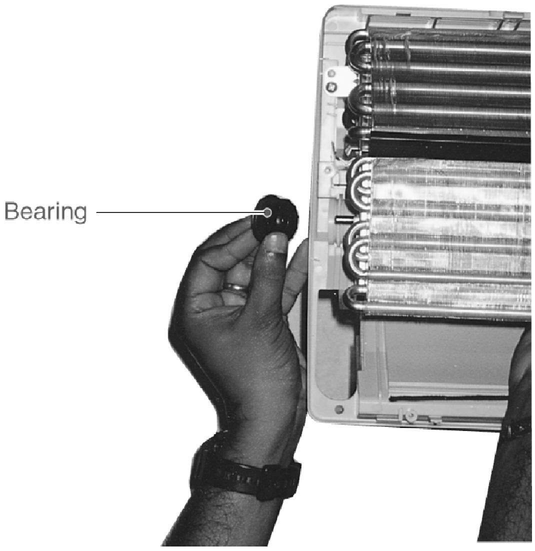

Fan Motor
Metal plate
Screw

Fig. 7



- Cross Flow Fan Removal Procedure

1. **Remove the Fan Mounting Screws and Bearing.**
   (Refer to No. 4 of Indoor Fan Motor the removal procedure)
2. **Loosen the 2 screws mounted at the left side of the evaporator.**
3. **Pull the left side of the evaporator forward slightly and remove the cross Flow Fan.**

(B) Disassembly of the parts (Outdoor Unit)

- Inspection points for the Outdoor Electronic Controller

1. **The Electronic Controller, can be seen by removing the cabinet Top plate and Front plate, as shown in the Fig. 10.**

Fig. 8

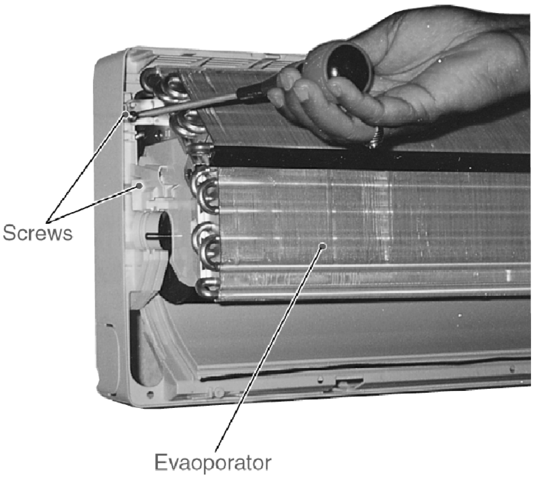

Screws
Evaoporator

Fig. 9

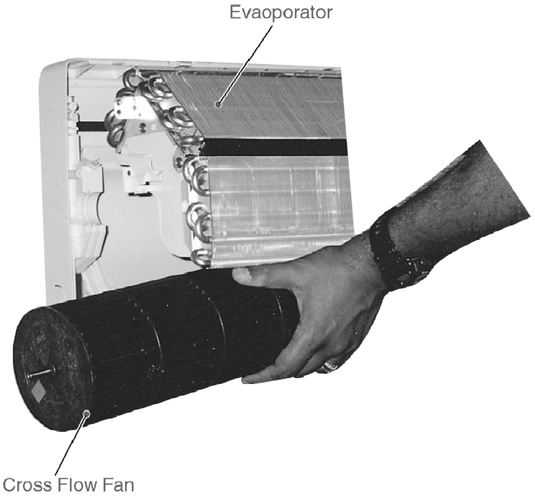
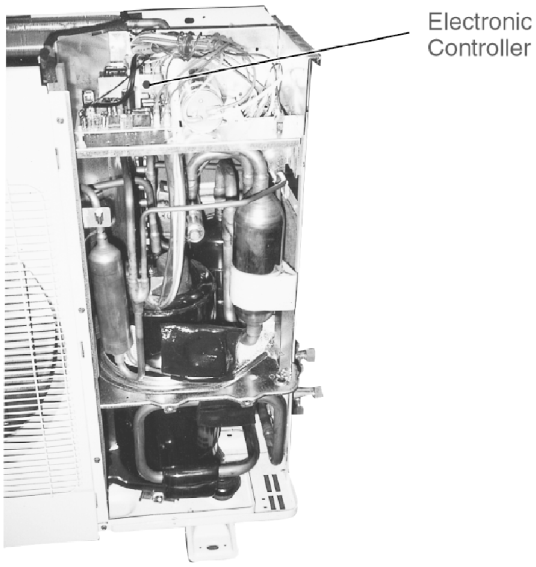

Evaoporator
Cross Flow Fan

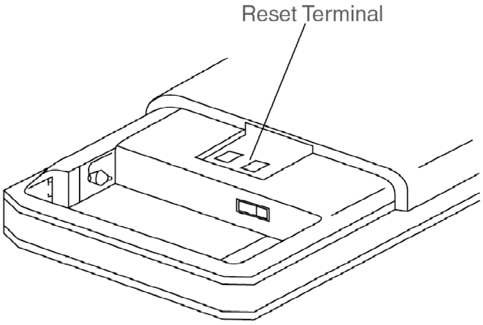
Fig. 10

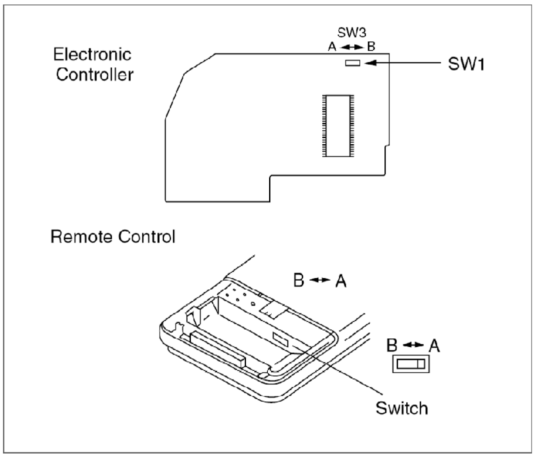


(C) Remote Control Transmission Setting

- Remote Control Reset
When the batteries are inserted for the first time, or the batteries are replaced, all the indications will blink and the remote control might not work. / If this happens, remove the back cover of the remote control and you will find a resetting terminal, and by shorting it with a minus screwdriver, it will return to normal.

- Changing the wireless remote control transmission code
When two indoor units are installed in the same room, in order to prevent operating errors caused by using two remote controls, set up the remote control [B ←→ A] switch (SW1). / The unit is set to A when it is shipped.





- **By adding a jumper wire to the remote control side and a carbon resistor (1/4 W, 10 kΩ) to the indoor printed circuit board, it is possible to select from 4 types of transmission codes including the condition at time of delivery condition (1).**

	Remote control		Indoor printed circuit board		Note
	Switch SW B ↔ A	J – B	Switch SW 3	RX	
1	A	——	A	——	At product delivery
2	B	——	B	——	
3	A	Jumper wire	A	10 kΩ	
4	B	Jumper wire	B	10 kΩ	

13. Troubleshooting Guide

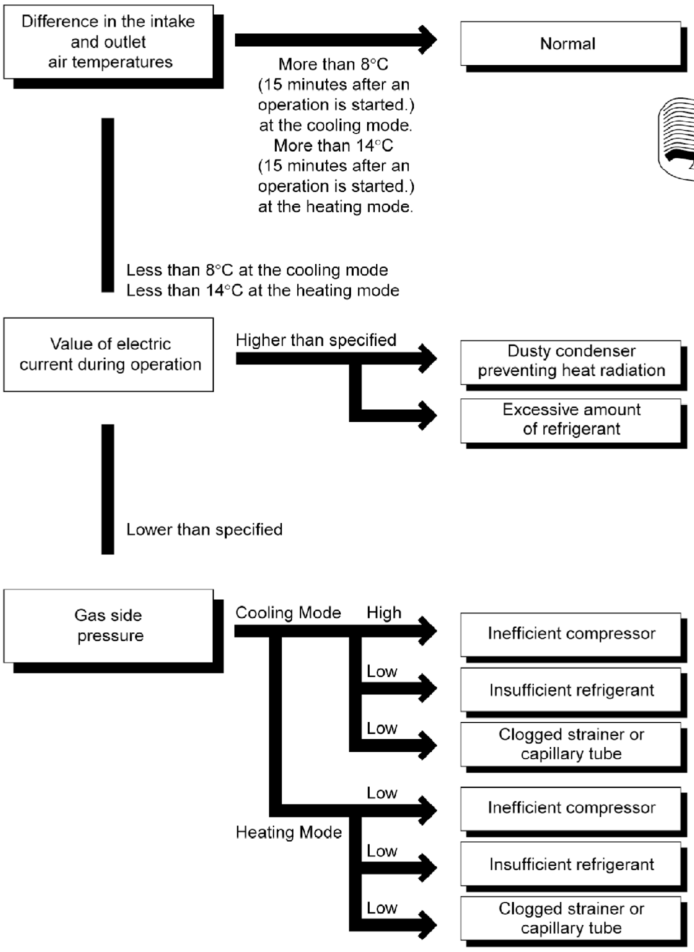
13.1. Refrigeration cycle system

In order to diagnose malfunctions, make sure that there are no electrical problems before inspecting the refrigeration cycle. Such problems include insufficient insulation, problem with the power source, malfunction of a compressor or a fan. / The normal outlet air temperature and pressure of the refrigeration cycle depends on various conditions, the standard values for them are shown in the table on the right.

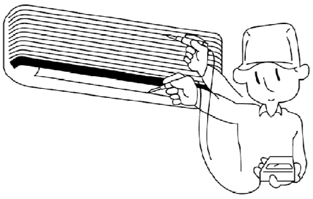
Normal Pressure and Outlet Air Temperature (Standard)

	Gas pressure Mpa (kg/cm^{2}G)	Outlet air temperature (°C)
Cooling Mode	0.4 ~ 0.6 (4 ~ 6)	12 ~ 16
Heating Mode	1.5 ~ 2.1 (15 ~ 21)	36 ~ 45

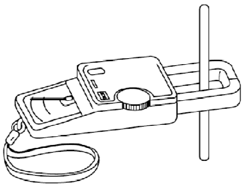
★ Condition: Indoor fan speed; High
Outdoor temperature 35°C at the cooling mode
and 7°C at the heating mode


Difference in the intake and outlet air temperatures
More than 8°C (15 minutes after an operation is started.) at the cooling mode. More than 14°C (15 minutes after an operation is started.) at the heating mode.
Normal
Less than 8°C at the cooling mode
Less than 14°C at the heating mode
Value of electric current during operation
Higher than specified
Dusty condenser preventing heat radiation
Excessive amount of refrigerant
Lower than specified
Gas side pressure
Cooling Mode
High
Inefficient compressor
Low
Insufficient refrigerant
Low
Clogged strainer or capillary tube
Heating Mode
Low
Inefficient compressor
Low
Insufficient refrigerant
Low
Clogged strainer or capillary tube

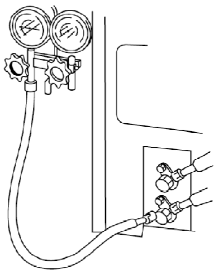
- **Measuring the air temperature difference**



- **Measuring electric current during operation**



- **Measuring gas side pressure**



13.1.1. Relationship between the condition of the air conditioner and pressure and electric current

Condition of the air conditoner	Cooling Mode			Heating Mode		
	Low Pressure	High Pressure	Electric current during operation	Low Pressure	High Pressure	El cu du op
Insufficient refrigerant (gas leakage)	↘	↘	↘	↘	↘	↘
Clogged capillary tube or Strainer	↘	↘	↘	↘	↘	↘
Short circuit in the indoor unit	↘	↘	↘	↗	↗	↗
Heat radiation deficiency of the outdoor unit	↗	↗	↗	↘	↘	↘
Inefficient compression	↗	↘	↘	↗	↘	↘

- Carry out the measurements of pressure, electric current, and temperature fifteen minutes after an operation is started.

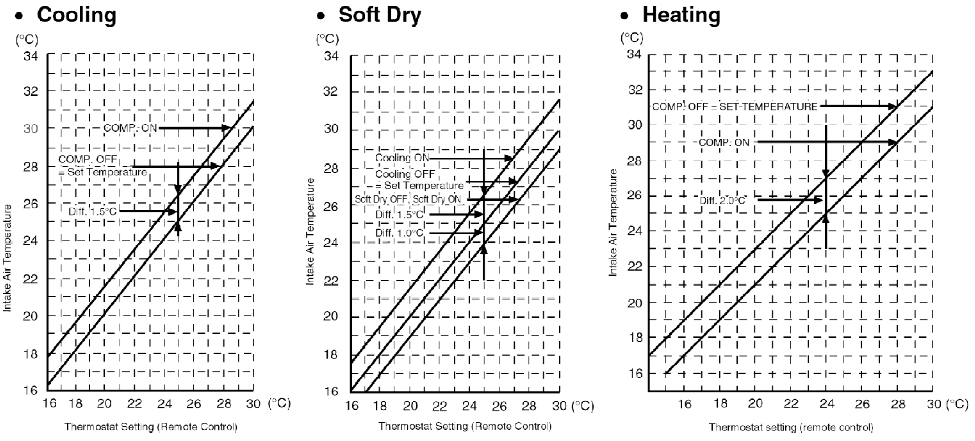
13.1.2. Diagnosis methods of a malfunction of a compressor and 4-way valve

Nature of fault	Symptom
Insufficient compressing of a compressor	**-Electric current during operation becomes approximately 20% lower than the normal valu** **-The discharge tube of the compressor becomes abnormally hot (normally 70 to 90°C).** **-The difference between high pressure and low pressure becomes almost zero.**
Locked compressor	**-Electric current reaches a high level abnormally, and the value exceeds the limit of an am some cases, a breaker turns off.** **-The compressor is a humming sound.**
Insufficient switches of the 4-way valve	**-Electric current during operation becomes approximately 80% lower than the normal valu** **-The temperature different between from the discharge tube to the 4-way valve and from s to the 4-way valve becomes almost zero.**

14. Technical Data

■ Thermostat characteristics

CS-A182KR / CS-A242KR


- Cooling
- Soft Dry
- Heating

■ Sensible Capacity Chart

- **CS-A182KR**

240V	Outdoor Temp. (°C)											
Indoor wet Bulb temp.	30			35			40			46		
	TC	SHC	IP	TC	SHC	IP	TC	SHC	IP	TC	SHC	IP
17.0°C	5.10	4.63	2.01	4.78	4.47	2.17	4.47	4.16	2.32	4.06	3.59	2.50
19.0°C				5.20		2.19						
19.5°C	5.67	4.06	2.04	5.30	3.80	2.19	4.94	3.74	2.34	4.52	3.59	2.52
22.0°C	6.29	3.80	2.06	5.88	3.33	2.21	5.46	2.96	2.39	4.99	2.60	2.56

230V	Outdoor Temp. (°C)											
Indoor wet Bulb temp.	30			35			40			46		
	TC	SHC	IP	TC	SHC	IP	TC	SHC	IP	TC	SHC	IP
17.0°C	5.05	4.58	1.93	4.74	4.43	2.08	4.43	4.12	2.23	4.02	3.55	2.39
19.0°C				5.15		2.10						
19.5°C	5.61	4.02	1.95	5.25	3.76	2.10	4.89	3.71	2.25	4.48	3.55	2.42
22.0°C	6.23	3.76	1.97	5.82	3.30	2.12	5.41	2.94	2.29	4.94	2.58	2.46

- **CS-A242KR**

240V	Outdoor Temp. (°C)											
Indoor wet bulb temp.	30			35			40			46		
	TC	SHC	IP	TC	SHC	IP	TC	SHC	IP	TC	SHC	IP
17.0°C	6.32	5.74	2.83	5.93	5.55	3.05	5.55	5.16	3.26	5.03	4.45	3.51
19.0°C				6.45		3.08						
19.5°C	7.03	5.03	2.86	6.58	4.71	3.00	6.13	4.64	3.30	5.61	4.45	3.54
22.0°C	7.80	4.71	2.90	7.29	4.13	3.11	6.77	3.68	3.36	6.19	3.23	3.60

230V	Outdoor Temp. (°C)											
Indoor wet Bulb temp.	30			35			40			46		
	TC	SHC	IP	TC	SHC	IP	TC	SHC	IP	TC	SHC	IP
17.0°C	6.27	5.70	2.71	5.89	5.50	2.92	5.50	5.12	3.13	4.99	4.42	3.36
19.0°C				6.40		2.95						
19.5°C	6.98	4.99	2.74	6.53	4.67	2.95	6.08	4.61	3.16	5.57	4.42	3.39
22.0°C	7.74	4.67	2.77	7.23	4.10	2.98	6.72	3.65	3.22	6.14	3.20	3.45

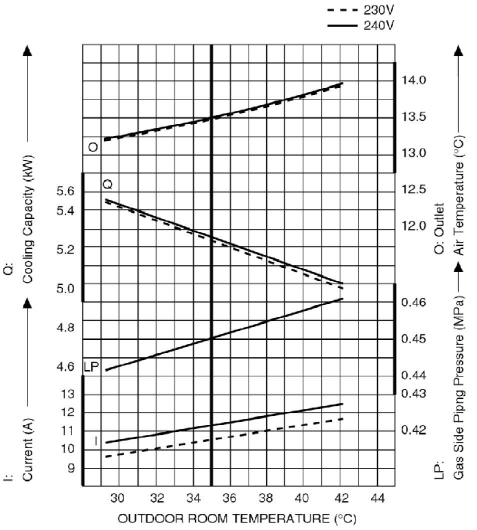
TC - Total Cooling (kW)
SHC - Sensible Heat Capacity
IP - Input Power

Indoor 27°C/19°C
Outdoor 35°C/24°C

Operation characteristics

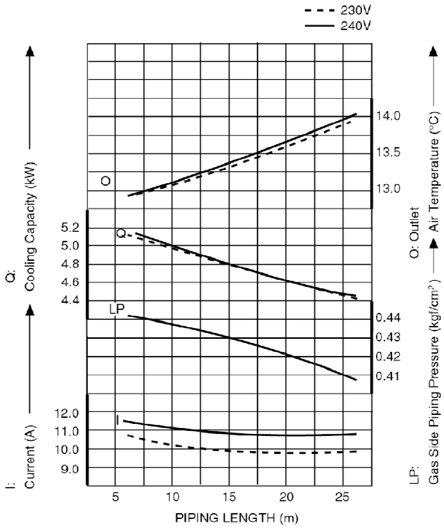
CS-A182KR / CU-A182KR

- **Cooling Characteristic**



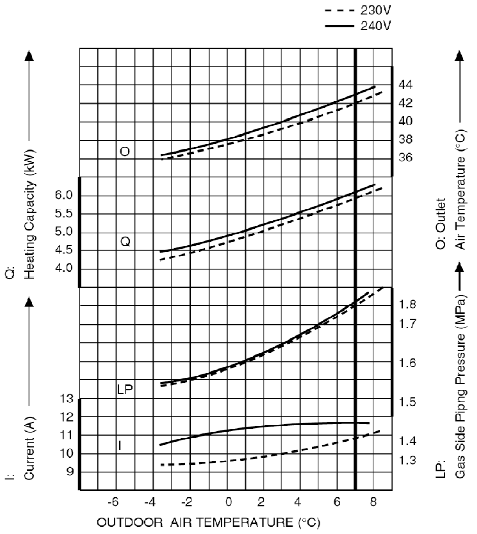
[Condition] Room temperature: 27/19°C
Cooling operation: High fan
Piping length: 7.5 m

- **Piping Length Characteristic (Cooling)**



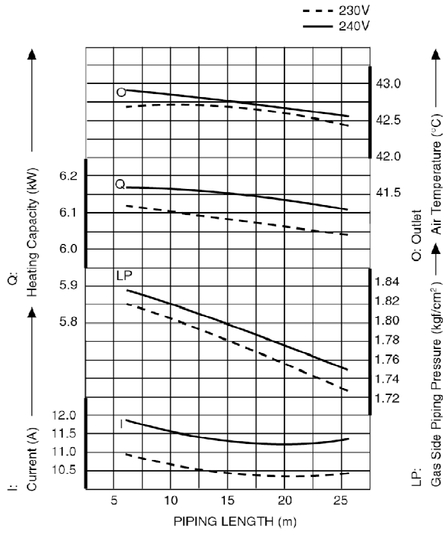
[Condition] Room temperature: 27/19°C
Outdoor air temperature: 35/24°C
Cooling operation: High fan

- **Heating Characteristic**



[Condition] Room temperature: 20°C
Heating operation:High fan
Piping length: 7.5 m

- **Piping Length Characteristic (Heating)**

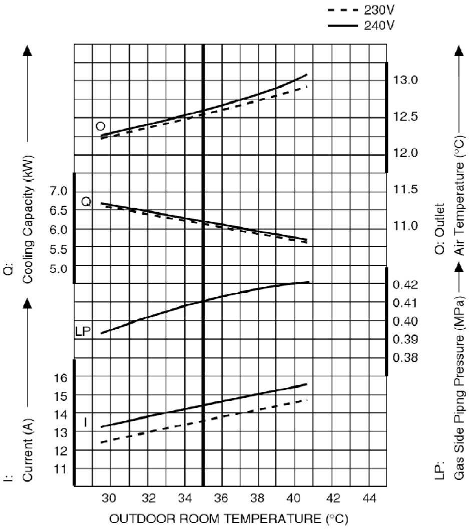


[Condition] Room temperature: 20°C
Outdoor temperature: 7/6°C
Heating operation: High fan

■ Operation characteristics

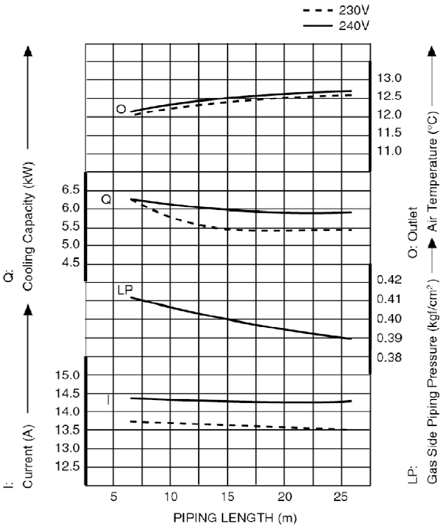
CS-A242KR / CU-A242KR

- **Cooling Characteristic**



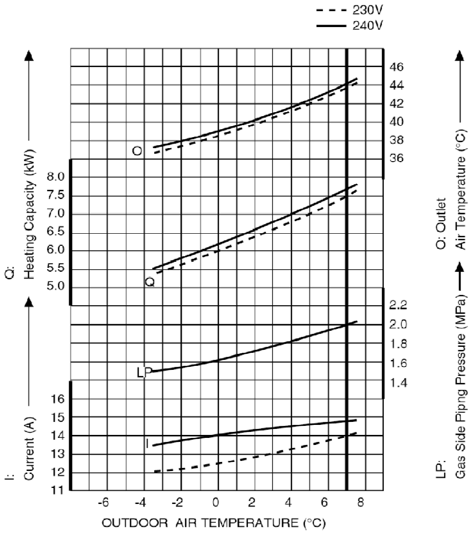
[Condition] Room temperature: 27/19°C
Cooling operation: High fan
Piping length: 7.5 m

- **Piping Length Characteristic (Cooling)**



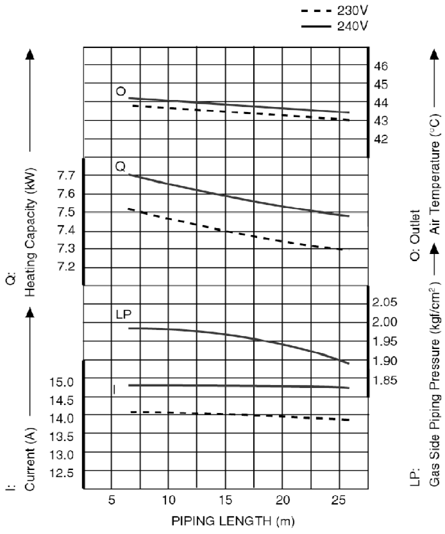
[Condition] Room temperature: 27/19°C
Outdoor air temperature: 35/24°C
Cooling operation: High fan

- **Heating Characteristic**



[Condition] Room temperature: 20°C
Heating operation:High fan
Piping length: 7.5 m

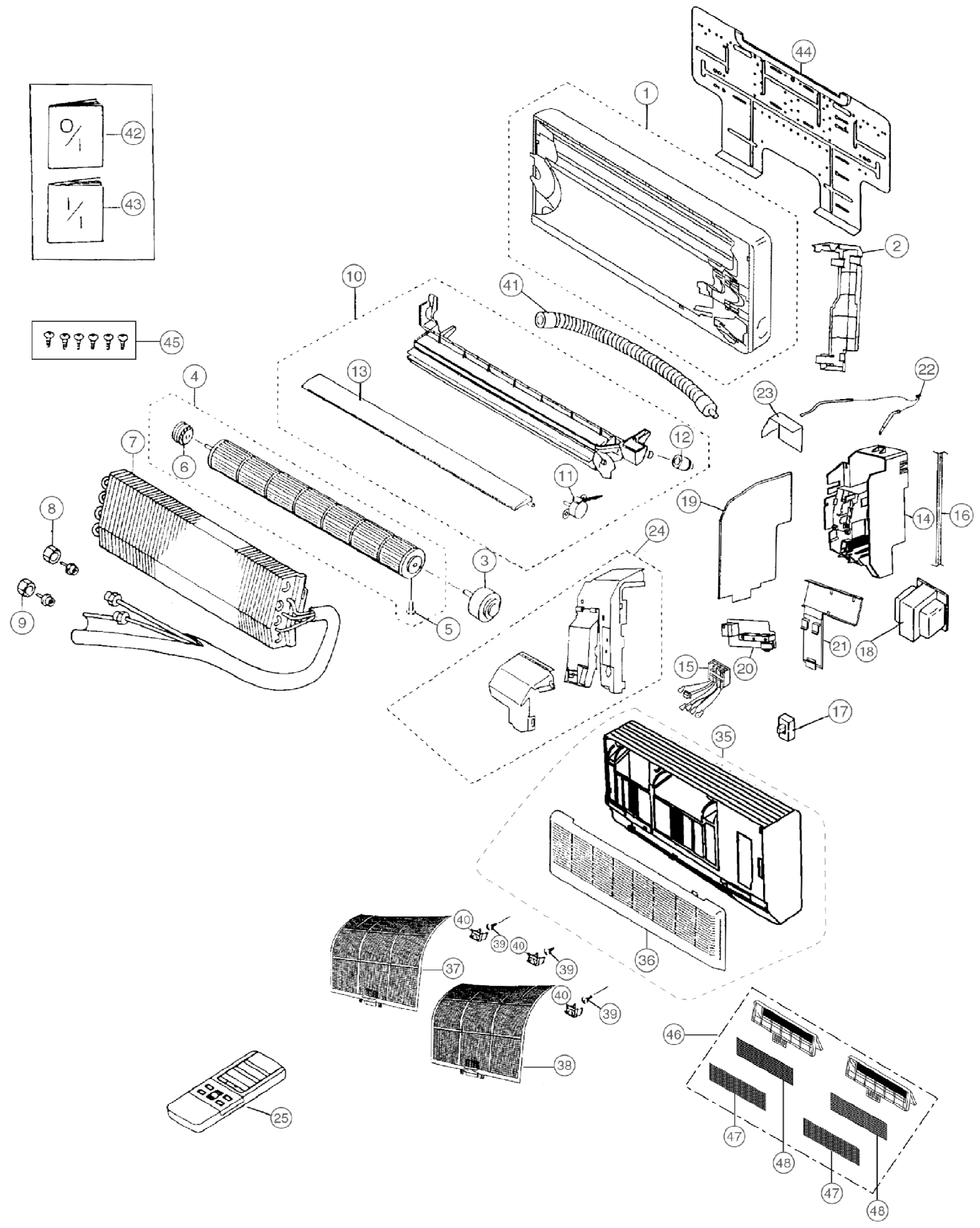
- **Piping Length Characteristic (Heating)**



[Condition] Room temperature: 20°C
Outdoor temperature: 7/6°C
Heating operation: High fan

15. Exploded View

CS-A182KR / CS-A242KR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Note:
The above exploded view is for the purpose of parts disassembly and replacement.
The non-numbered parts are not kept as standard service parts.

16. Replacement Parts List

<Model: CS-A182KR / CS-A242KR>

NO.	DESCRIPTION & NAME	Q'TY	CS-A182KR	CS-A242KR	REMARKS
1	CHASSY COMPLETE	1	CWD50C369	←	
2	CHASSY BACK COVER	1	CWD93956	←	
3	FAN MOTOR	1	CWA98273	CWA98273	O
4	CROSS FLOW FAN COMPLETE	1	CWH02C058	←	
5	SCREW - CROSS FLOW FAN	1	CWH4580304	←	
6	BEARING ASS'Y	1	CWH64K007	←	
7	EVAPORATOR	1	CWB30C284	CWB30C285	
8	FLARE NUT (1/4")	1	CWH6002140	←	
9	FLARE NUT (1/2") OR (5/8")	1	CWT25007 (1/2")	CWT25004 (5/8")	
10	DISCHARGE GRILLE COMPLETE	1	CWE20C574	←	
11	MOTOR - AIR SWING	1	CWA98267	←	O
12	TAP - DRAIN TRAY	1	CWH4612103	←	
13	VANE	1	CWE24443	←	
14	CONTROL BOARD	1	CWH10943A	←	
15	TERMINAL BOARD COMPLETE	1	CWA28C584	CWA28C585	O
16	POWER SUPPLY CORD	1	CWA20C2189	CWA20C780	
17	SLIDE SWITCH	1	CWA04088	←	O
18	TRANSFORMER COMPLETE	1	CWA40C246	←	O
19	ELECTRONIC CONTROLLER	1	CWA742082	CWA742083	O
20	RECEIVER COMPLETE	1	CWA742002	←	O
21	RECEIVER COMPLETE HOLDER	1	CWD93957	←	
22	SENSOR COMPLETE	1	CWA50C621	←	O
23	CONTROL BOARD TOP COVER	1	CWH13473	←	
24	CONTROL BOARD FRONT COVER	1	CWH13C320	←	
25	REMOTE CONTROL COMPLETE	1	CWA75C556	←	O
35	FRONT GRILLE COMPLETE	1	CWE11C994	←	O
36	INTAKE GRILLE COMPLETE	1	CWE22C329	←	
37	AIR FILTER (LEFT)	1	CWD00232	←	O
38	AIR FILTER (RIGHT)	1	CWD00231	←	O
39	SCREW - FRONT GRILLE	3	XTT4+16C	←	
40	CAP - FRONT GRILLE	3	CWH52258	←	
41	DRAIN HOSE	1	CWH85284	←	
42	OPERARTING INSTRUCTIONS	1	CWF563264	←	
43	INSTALLATION INSTRUCTIONS	1	CWF612178	←	
44	INSTALLATION PLATE	1	CWH82C194	←	
45	BAG COMPLETE - INSTALLATION SCREW	1	CWH82C194	←	
46	AIR PURIFYING FILTER COMPLETE	1	CWD00C1028	←	
47	AIR PURIFYING FILTER (CATECHIN)	2	CWD001014	←	O
48	AIR PURIFYING FILTER (DEODORIZING)	2	CWD001033	←	O

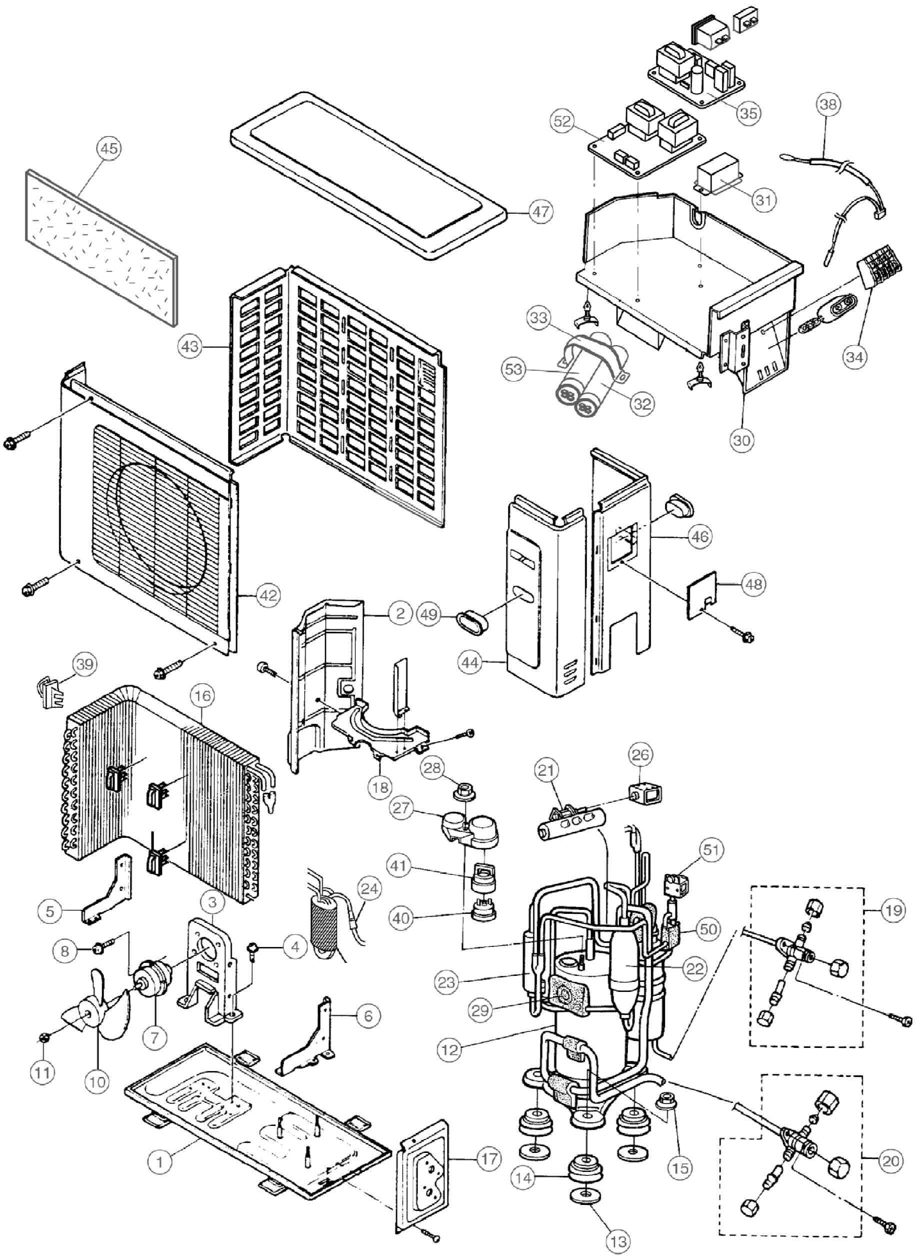
(Note)

- All parts are supplied from MACC, Malaysia (Vendor Code: 086).

- "O" marked parts are recommended to be kept in stock.

17. Exploded View

CU-A182KR / CU-A242KR



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Note:
The above exploded view is for the purpose of parts disassembly and replacement.
The non-numbered parts are not kept as standard service parts.

18. Replacement Parts List

<Model: CU-A182KR / CU-A242KR>

NO.	DESCRIPTION & NAME	Q'TY	CU-A182KR	CU-A242KR	REMARKS
1	CHASSY ASS'Y	1	CWD50K514B	←	
2	SOUND PROOF BOARD	1	CWH15223	←	
3	FAN MOTOR BRACKET	1	CWD54145	←	
4	SCREW - FAN MOTOR BRACKET	6	CWH55101	←	
5	PARTICULAR PLATE F/M (L)	1	CWD90835	←	
6	PARTICULAR PLATE F/M (R)	1	CWD90836	←	
7	FAN MOTOR	1	CWA92294	CWA92295	O
8	SCREW - FAN MOTOR	4	CWH55252	←	
9	HOLD FOR F/MOTOR & LEAD WIRES	3	CWH31043	←	
10	PROPELLER FAN	1	CWH00K050	←	
11	NUT - PROPELLER FAN	1	CWH56060	←	
12	COMPRESSOR	1	2JS350D3AA02	2JS464D3AA02	O
13	PACKING - COMP. MOUNT	2	CWB81043	←	
14	ANTI - VIBRATION BUSHING - COMP. MOUNT.	3	CWH50055	←	
15	NUT - COMP. MOUNT	3	CWH4582065	←	
16	CONDENSER	1	CWB32C344	CWB32C345	
17	HOLDER - COUPLING ASS'Y	1	CWH35113B	CWH35114B	
18	GUIDER COMPLETE	1	CWD90830	←	
19	3-WAYS VALVE (LIQUID)	1	CWB01495	←	O
20	3-WAYS VALVE (GAS)	1	CWB01364	CWB01430	O
21	4-WAYS VALVE ASS'Y	1	CWB00K1003	CWB00K1004	O
22	ACCUMULATOR ASS'Y	1	CWB13K011	CWB13K047	O
23	OIL SEPERATER ASS'Y	1	CWB16K1006	CWB16K1007	O
24	STRAINER	1	CWB11051	←	
25	TUBE ASS'Y (CAPILLARY TUBE, CHECK VALVE)	1	CWT01C671	CWT01C672	
26	V - COIL COMPLETE	1	CWA43C2005	←	O
27	TERMINAL COVER	1	CWH17015	←	
28	NUT FOR TERMINAL COVER	1	CWH7080300	←	
29	TUBE ASS'Y (CAPILLARY TUBE)	1	CWT01808	←	
30	CONTROL BOARD ASS'Y	1	CWH10K1013	←	
31	CAPACITOR - FAN MOTOR	1	CWA31608	CWA31621	O
32	CAPACITOR - COMPRESSOR	1	CWA31504	CWA31507	O
33	HOLDER - CAPACITOR	1	CWH301015	CWH301016	
34	TERMINAL BOARD ASS'Y	1	CWA28C382	←	O
35	ELECTRONIC CONTROLLER	1	CWA741314	CWA741315	O
38	SENSOR COMPLETE	1	CWA50C622	←	O
39	HOLDER - SENSOR	1	CWH32082	←	
40	OVERLOAD PROTECTOR	1	CWA12262	←	O
41	HOLDER - OVERLOAD PROTECTOR	1	CWH34012	←	
42	CABINET FRONT PLATE COMPLETE	1	CWE06K034B	←	
43	CABINET REAR PLATE COMPLETE	1	CWE02096B	←	
44	CABINET FRONT PLATE COMPLETE	1	CWE06075B	←	
45	SOUND PROOF MATERIAL	1	CWG30894	←	
46	CABINET SIDE PLATE	1	CWE04111B	←	
47	CABINET TOP PLATE	1	CWE03101B	←	
48	CONTROL BOARD COVER	1	CWH13331A	←	
49	HANDLE	2	CWE16000E	←	

NO.	DESCRIPTION & NAME	Q'TY	CU-A182KR	CU-A242KR	REMARKS
50	2 - WAYS VALVE	1	----	CWB02018	O
51	V -COIL COMPLETE	1	----	CWA43C494	O
52	ELECTRONIC CONTROLLER	1	CWA742407	←	
53	SH CAPACITOR - COMPLETE	1	CWA31C1003	CWA31C1004	

(Note)

- All parts are supplied from MACC, Malaysia (Vendor Code: 086).

- "O" marked parts are recommended to be kept in stock.

19. Electronic Parts List

Electronic Controller : CWA742082 (A182KR) / Electronic Controller : CWA742083 (A242KR)

SYMBOL	DESCRIPTION & NAME	PART NO.
IC1	INTEGRATED CIRCUIT	A52D011F064
IC2	INTEGRATED CIRCUIT COMPLETE	A52C096
IC3	INTEGRATED CIRCUIT COMPLETE	A52C050
IC4	INTEGRATED CIRCUIT	B1HAGGF00002
IC5	INTEGRATED CIRCUIT	C3EADG000003
IC6	INTEGRATED CIRCUIT	A52MPC939C
IC7	INTEGRATED CIRCUIT	A52BX8315
PC	PHOTO COUPLER	A52LP620-R4
Q1	TRANSISTOR COMPLETE	A55C130
Q2	TRANSISTOR	2SD22200QA
Q3, Q5, Q7 ~ Q9, Q13 ~ Q15	TRANSISTOR	B1GACFJJ0007
Q4	TRANSISTOR	A55C1740STPQ
Q6	TRANSISTOR	A55C1741ASTR
Q10 ~ Q12	TRANSISTOR	B1GCCFGH0002
Q16	INTEGRATED CIRCUIT COMPLETE	A52C071
Q17	INTEGRATED CIRCUIT COMPLETE	A52C070
DB1	DIODE	B0EBNR000008
DB2	DIODE	A54CS1VB20E
D1	DIODE	B0HAMT000015
D2	DIODE COMPLETE	A54C198
D3	DIODE	B0AACK000002
D6	DIODE	B0EAKL000046
D7 ~ D13, D16 ~ D23	DIODE	A54MA165TA5
D24	DIODE	A54MA723TA
ZD1	DIODE	B0BA7R9000013
ZNR1, ZNR2	DIODE COMPLETE	A54C353
L1	V-COIL	J0JYB0000009
L2 ~ L6	V-COIL	J0JYB0000007
LF1	NOISE FILTER	A49219
LF2	NOISE FILTER	A49220
T1	TRANSFORMER	A401005 (A182KR ONLY)
T1	TRANSFORMER	A40287 (A242KR ONLY)
T2	TRANSFORMER	A40263
RY-HOT	ELECTRO MAGNETIC RELAY	A00161
RY-PWR	ELECTRO MAGNETIC RELAY	K6B1AGA00077
SW1	SLIDE SWITCH	K0D112A00064
SW2, SW3	PUSH SWITCH	EVQQKH08Q
FUSE	FUSE	XBA2C31TR0
RESONATOR	RESONATOR	A45ST800MG03
BZ	BUZZER (SOUND GENERATOR)	A48039
VR1	VARIABLE RESISTOR	EVMEASA00B52
FUSE	TEMPERATURE FUSE	A16C204

Note

- All parts are supplied from MACC, Malaysia (Vendor Code: 086)

Electronic Controller : CWA741314 (A182KR) / Electronic Controller : CWA741315 (A242KR)

SYMBOL	DESCRIPTION & NAME	PART NO.
IC1	INTEGRATED CIRCUIT	A52C78414Y
IC2	INTEGRATED CIRCUIT COMPLETE	A52C094
IC3	INTEGRATED CIRCUIT COMPLETE	A52C040
IC4	INTEGRATED CIRCUIT	B1HAGGF00002
Q1	TRANSISTOR	A55C1740STPQ
Q2	TRANSISTOR	A55DTC113ZST
D1 ~ D6	DIODE	A54MA165TA5
DB1, DB2	DIODE	A54CS1VB20E
T1, T2	TRANSFORMER	A40378
CR1	SURGE ABSORBER	J0HBJY000003
CR2	SURGE ABSORBER	J0HBJY000003 (A242KR O
RY-HOT	ELECTRO MAGNETIC RELAY	A00160
RY-DEICE	ELECTRO MAGNETIC RELAY	A00160
RY-OFF	ELECTRO MAGNETIC RELAY	A00160
RY-H/L	ELECTRO MAGNETIC RELAY	A00160
RY-V	ELECTRO MAGNETIC RELAY	A00160 (A242KR ONLY)
FUSE	FUSE	XBA2C31TR0
X1	OSCILLATOR	A45ST4.0MGWT

Note

- All parts are supplied from MACC, Malaysia (Vendor Code: 086)

<Model: CWA742407>

SYMBOL	DESCRIPTION & NAME	PART NO.
IC1	INTEGRATED CIRCUIT	C0BACA000005
Q3	TRANSISTOR	B1GACFGH0002
Q1, Q2	TRANSISTOR	A55C1741ASTR
D1, D2	DIODE	B0EAKL000008
ZNR1	DIODE (ZNR)	ERZVEAV511
ZD1	ZENAR DIODE	B0BA7R0A0014
ZNR1, ZNR2	DIODE CO. (ZNR)	A54C352
FUSE HOLDER	FUSE HOLDER	K3GE1BA00015
DB1	DIODE	A54CS1VB20E
T1	TRANSFORMER	A40378
RY-L, RY-C	ELECTRO MAGNETIC SWITCH	K6B1AGA00070
FUSE	FUSE	XBA2C20TRO

Note

- All parts are supplied from MACC, Malaysia (Vendor Code: 086)

20. Electronic Circuit Diagram

Fig. 1

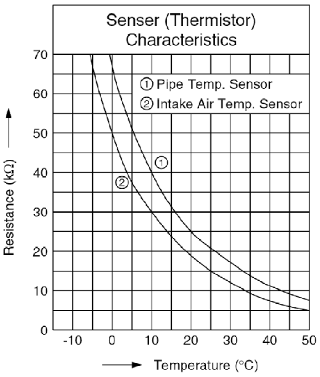


Fig. 1

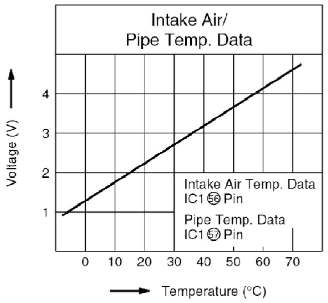


Fig.3 Indoor Fan Speed

Fan Speed		**High Speed ←→ Low Speed**							
No.		**8**	**7**	**6**	**5**	**4**	**3**	**2**	**1**
Cooling	**Manual**		**O**	**O**	**O**				
	Auto		**O**	**O**			**O**		
	Sleep					**O**			
Soft Dry	**Manual, Auto**						**O**		
	Sleep					**O**			
Heating	**Manual (A182K)**	**O**		**O**	**O**				
	Manual (A242K)	**O**	**O**	**O**					
	Auto			**O**	**O**	**O**	**O**		
	Sleep					**O**	**O**		
Voltage to Fan Motor Drive Transistor (DCV)	**CS-A182K**	**44.0**	**42.0**	**36.3**	**31.2**	**25.3**	**21.0**	**8.0**	**8.0**
	CS-A242K	**52.8**	**47.8**	**41.4**	**36.3**	**28.0**	**21.1**	**8.0**	**8.0**
		SHi	**Hi**	**Me**	**Lo**	**Lo-**	**SLo**	**START 2**	**STAR 1**

Fig. 4

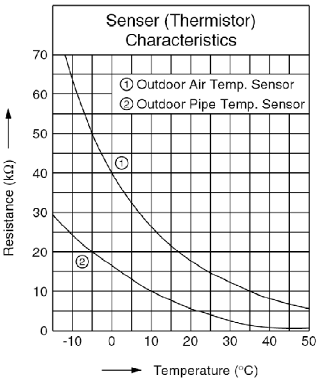


Fig. 5

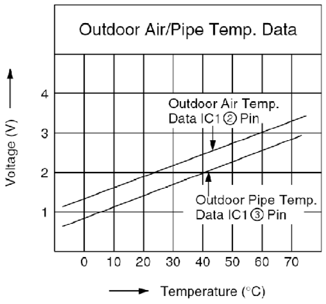
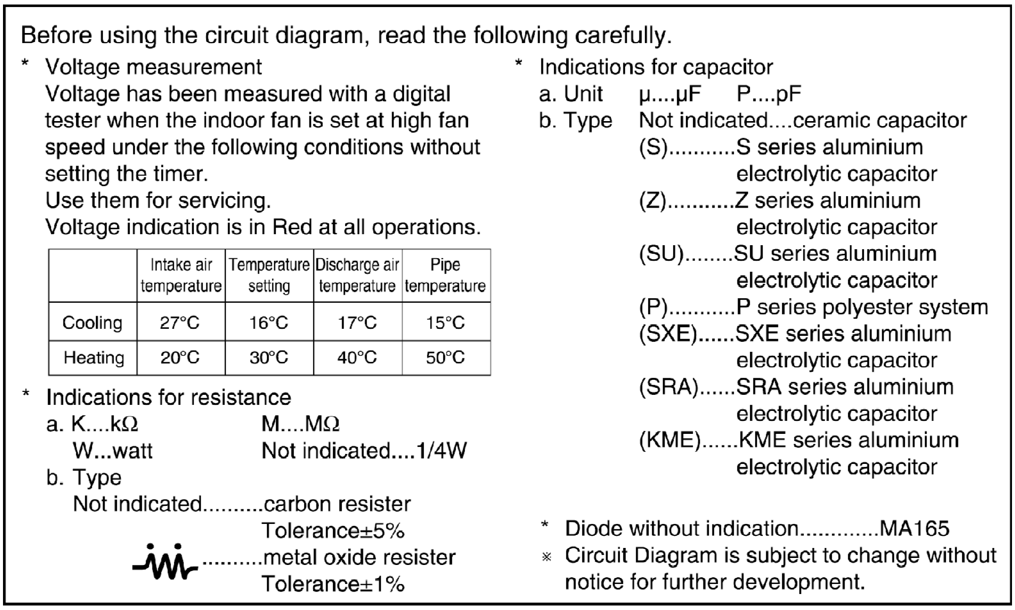


Fig. 6

OUTDOOR TEMP.	RISES		RISES		FALLS
COOLING	OVER 29°C	Hi	OVER 29°C	Hi	OVER 31°C
SOFT DRY	BELOW 29°C	Lo	BELOW 29°C	Lo	BELOW 31C
HEATING	BELOW 15.5°C	Hi	BELOW 15.5°C	Hi	BELOW 13.5°C
	OVER 15.5°C	Lo	OVER 15.5°C	Lo	OVER 13.5°C

How to use electronic circuit diagram



Before using the circuit diagram, read the following carefully.

* Voltage measurement
Voltage has been measured with a digital tester when the indoor fan is set at high fan speed under the following conditions without setting the timer.
Use them for servicing.
Voltage indication is in Red at all operations.

	Intake air temperature	Temperature setting	Discharge air temperature	Pipe temperature
Cooling	27°C	16°C	17°C	15°C
Heating	20°C	30°C	40°C	50°C

* Indications for resistance
a. K....kΩ M....MΩ
W...watt Not indicated....1/4W
b. Type
Not indicated..........carbon resister Tolerance±5%
..........metal oxide resister Tolerance±1%

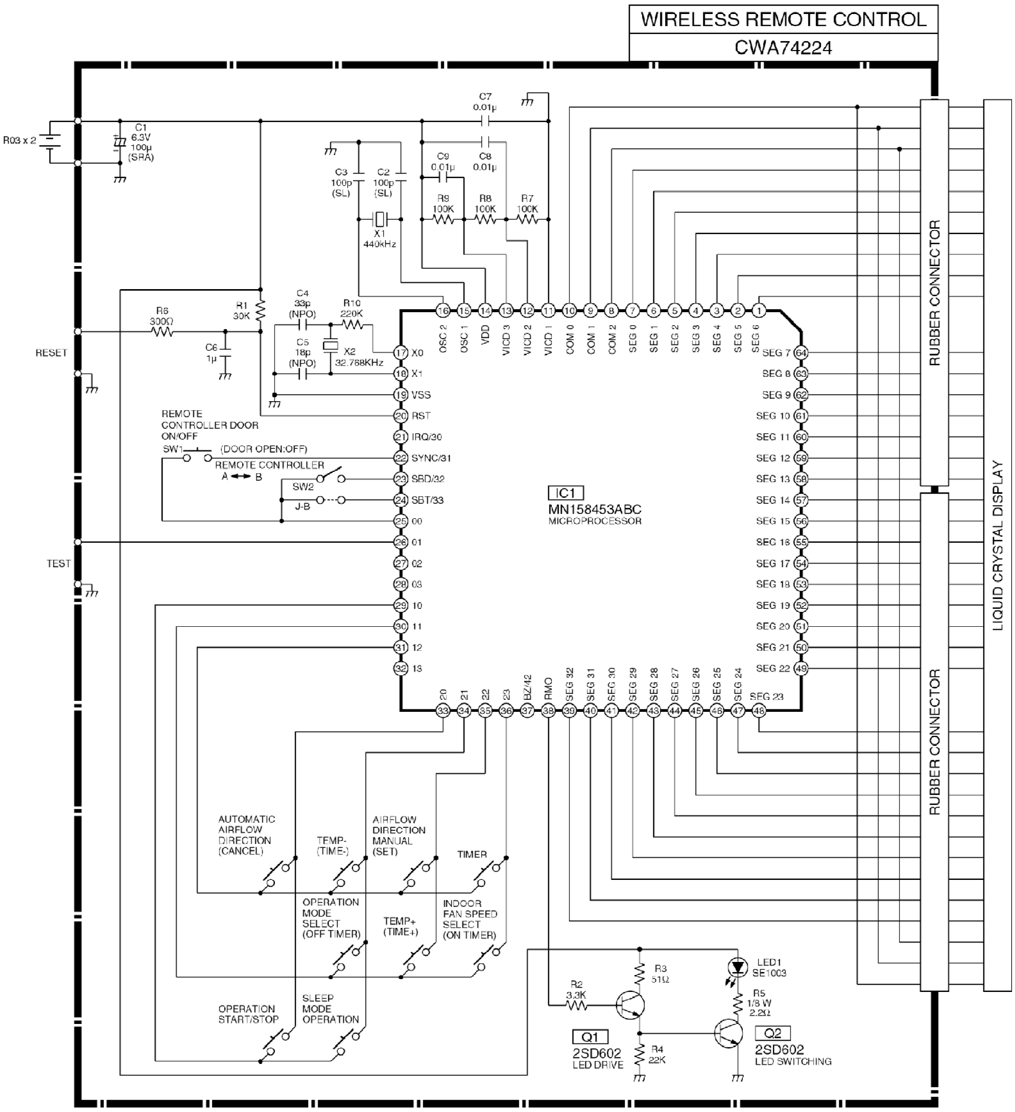
* Indications for capacitor
a. Unit μ....μF P....pF
b. Type Not indicated....ceramic capacitor
(S)...........S series aluminium electrolytic capacitor
(Z)...........Z series aluminium electrolytic capacitor
(SU)........SU series aluminium electrolytic capacitor
(P)...........P series polyester system
(SXE)......SXE series aluminium electrolytic capacitor
(SRA)......SRA series aluminium electrolytic capacitor
(KME)......KME series aluminium electrolytic capacitor

* Diode without indication.............MA165
⨳ Circuit Diagram is subject to change without notice for further development.

TIMER TABLE

Name		Time	Test mode (When test point Short-circulated)	Remarks
Sleep Mode Waiting		1 hr.	6 sec.	
Sleep Mode Operation		8 hrs.	48 sec.	
Real Timer		1 hr.	1 min.	
		10 min.	10 sec.	
		1 min.	1 sec.	
Time Delay Safety Control		2 min. 58 sec.	0 sec.	
Forced Operation		60 sec.	0 sec.	
Time Save Control		7 min.	42 sec.	
Anti-Freezing Control		4 min.	0 sec.	
Mode Judgement		20 sec.	0 sec.	
Soft Dry	Off	6 min.	36 sec.	
	On	10 min.	60 sec.	SOFT DRY : 10 min. operation
Deodorizing Control	Cooling	40 sec.	4 sec.	Comp. ON
		70 sec.	7 sec.	Comp. ON
		20 sec.	2 sec.	Comp. OFF
		180 sec.	18 sec.	Comp. OFF
	Soft Dry	40 sec.	4 sec.	Comp. ON
		360 sec.	36 sec.	Comp. OFF
Indoor Fan Step Change		1 sec.	0 sec.	
After Deice Ended		30 sec.	3 sec.	Comp. OFF, F/Motor ON
4-Way valve		5 min.	30 sec.	

20.1. REMOTE CONTROL


WIRELESS REMOTE CONTROL
CWA74224
R03 x 2
C1 6.3V 100µ (SRA)
C7 0.01µ
C8 0.01µ
C9 0.01µ
C3 100p (SL)
C2 100p (SL)
X1 440kHz
R9 100K
R8 100K
R7 100K
R6 300Ω
R1 30K
C6 1µ
C4 33p (NPO)
C5 18p (NPO)
R10 220K
X2 32.768KHz
RESET
TEST
REMOTE CONTROLLER DOOR ON/OFF
SW1
(DOOR OPEN:OFF)
REMOTE CONTROLLER A ↔ B
SW2
J-B
OSC 2
OSC 1
VDD
VICD 3
VICD 2
VICD 1
COM 0
COM 1
COM 2
SEG 0
SEG 1
SEG 2
SEG 3
SEG 4
SEG 5
SEG 6
X0
X1
VSS
RST
IRQ/30
SYNC/31
SBD/32
SBT/33
00
01
02
03
10
11
12
13
IC1
MN158453ABC
MICROPROCESSOR
SEG 7
SEG 8
SEG 9
SEG 10
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SEG 22
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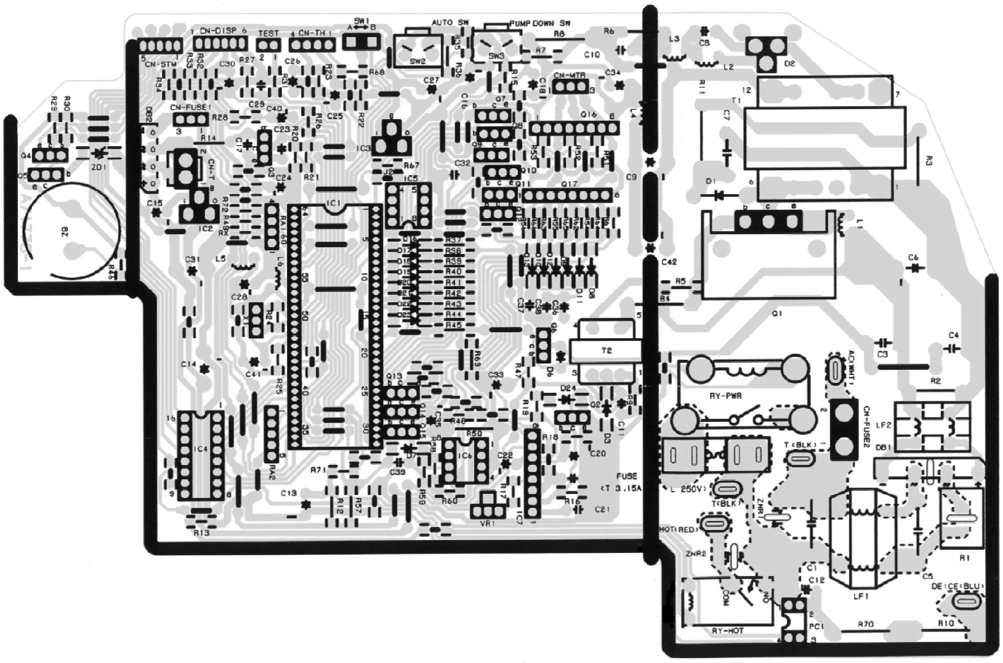
23
BZ/42
RMO
SEG 32
SEG 31
SEG 30
SEG 29
SEG 28
SEG 27
SEG 26
SEG 25
SEG 24
RUBBER CONNECTOR
RUBBER CONNECTOR
LIQUID CRYSTAL DISPLAY
AUTOMATIC AIRFLOW DIRECTION (CANCEL)
TEMP- (TIME-)
AIRFLOW DIRECTION MANUAL (SET)
TIMER
OPERATION MODE SELECT (OFF TIMER)
TEMP+ (TIME+)
INDOOR FAN SPEED SELECT (ON TIMER)
OPERATION START/STOP
SLEEP MODE OPERATION
R2 3.3K
R3 51Ω
R4 22K
R5 1/8 W 2.2Ω
LED1 SE1003
Q1 2SD602 LED DRIVE
Q2 2SD602 LED SWITCHING

REMOTE CONTROL NO.	SW2		J-B	REMARKS
	A	B		
0	○	–	–	AT DELIVERY
1	–	○	–	
2	○	–	○	
3	–	○	○	

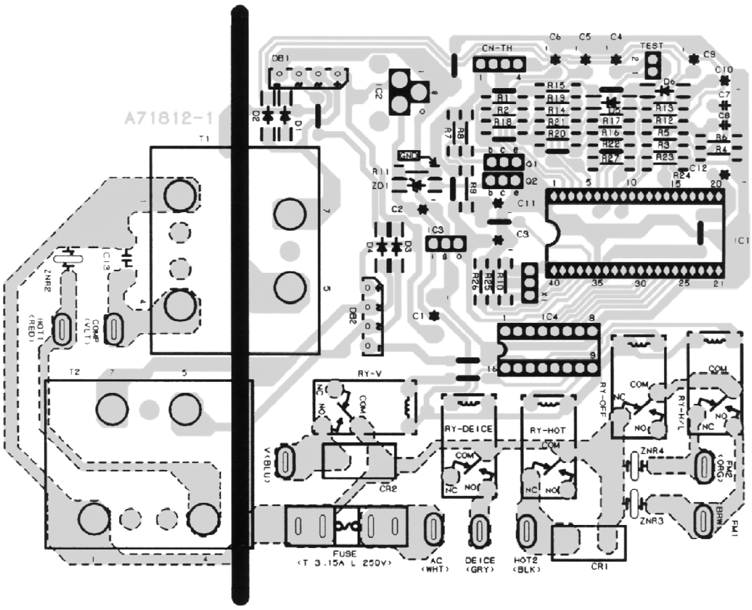
J-B: THE ○ MARK INDICATES "JUMPER WIRE"

20.2. PRINT PATTERN

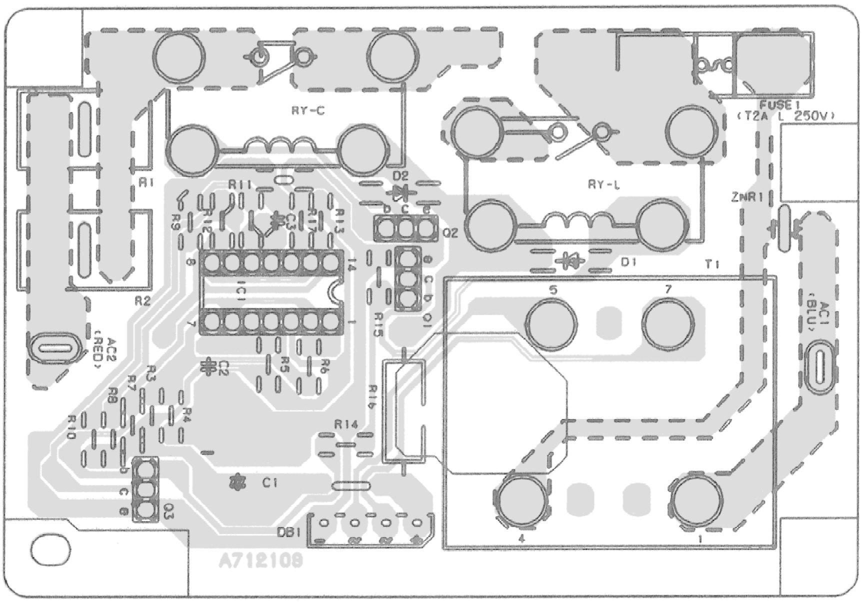
INDOOR UNIT PRINTED CIRCUIT BOARD


CN-DISP
TEST
CN-TH
SW1
AUTO SW
PUMP DOWN SW
SW2
SW3
CN-STM
CN-FUSE1
CN-MTR
CN-T
IC1
IC2
IC4
IC5
IC6
IC7
BZ
ZD1
RY-PWR
CN-FUSE2
AC(WHT)
T(BLK)
HOT(RED)
FUSE
(T 3.15A L 250V)
ZNR1
ZNR2
RY-HOT
COM
NO
PC1
LF1
LF2
DB1
T1
T2
Q1
D2
DE ICE(BLU)
VR1

OUTDOOR UNIT PRINTED CIRCUIT BOARD

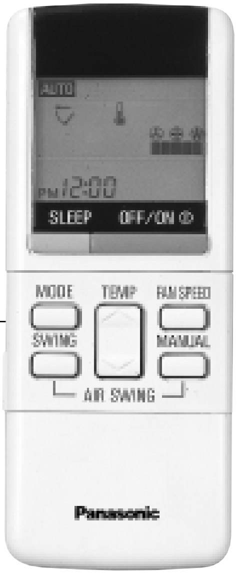

A71812-1
T1
T2
DB1
DB2
CN-TH
TEST
IC1
IC4
ZD1
ZNR2
HOT(RED)
COMP(VLT)
RY-V
RY-DEICE
RY-HOT
RY-OFF
RY-H/L
COM
NC
NO
V(BLU)
CR2
FUSE
(T 3.15A L 250V)
AC (WHT)
DE ICE (GRY)
HOT2 (BLK)
CR1
ZNR3
ZNR4
FM2
ORG
BRN
FM1

SOFT STARTER PRINTED CIRCUIT BOARD


RY-C
RY-L
FUSE1
‹T2A L 250V›
ZNR1
R1
R2
R11
R9
R12
C3
R17
R13
D2
Q2
IC1
8
14
7
1
R15
D1
T1
5
7
AC1
‹BLU›
AC2
‹RED›
C2
R5
R6
R3
R7
R8
R4
R10
R16
R14
C1
Q3
DB1
4
1
A712109

[MACC] Printed in Malaysia /

Remote Control



OFF / ON ⏀

Operation OFF / ON

MODE

Operation Mode Selection

• AUTO	Automatic Operation Mode
• HEAT	Heating Operation Mode
• COOL	Cooling Operation Mode
• DRY	Soft Dry Operation Mode

FAN SPEED

Indoor Fan Speed Selection

• ✣ ✣ ✣ ■	Low Speed
• ✣ ✣ ✣ ■■■	Medium Speed
• ✣ ✣ ✣ ■■■■■	High Speed
• AUTOFAN	Automatic Fan Speed

AIR SWING

Airflow Direction Control

• SWING	Automatic Airflow Direction Control
• MANUAL	Airflow Direction Manual Control

TEMP.

Room Temperature Setting

- Temperature Setting (16˚C to 30˚C)
- Automatic Operation

🌡 ◄ 🌡	2˚C lower than standard
🌡	Standard
🌡 ► 🌡	2˚C higher than standard

ON-TIMER
OFF-TIMER

Timer Operation Selection

- 24-hour, OFF / ON Real Timer Setting.

TIME

Time / Timer Setting

- Hours and minutes setting.

SET
CANCEL

Timer Operation Set / Cancel

- ON Timer and OFF Timer setting and cancellation.

CLOCK

Clock Setting

- Current time setting.

SLEEP

Sleep Mode Operation OFF / ON

Indoor Unit

Panasonic
POWER SLEEP TIMER

POWER ⏻

Power Switch OFF / ON

AUTO
OFF / ON

Auto Operation Switch

- Used when the remote control cannot be used.

Remote Control Signal Receiving Sound Control

- It can be controlled by pressing Auto Operation Switch for 10 seconds.

TEST RUN
OFF / ON

Operation Test Running / Pump Down Switch

- Used when test running or servicing.

Operation Indication Lamps (LED)

- POWER (Red)...... Lights up in operation, blinks in Automatic Operation Mode judging and Hot Start operation.
- SLEEP (Orange).... Lights up in Sleep Mode Operation.
- TIMER (Orange).... Lights up in Timer Setting.

Operation Mode

- Heating, Cooling, Soft Dry, and Automatic Mode.

Time Delay Safety Control

- Restarting is inhibited for appro. 3 minutes.

7 Minutes Time Save Control

- Cooling Operation only.

Auto Restart Control

- Operation is restarted after power failure at previous setting mode.

Anti-Freezing Control

- Anti-Freezing control for indoor heat exchanger. (Cooling and Soft Dry)

Sleep Mode Auto Control

- Indoor Fan operates at Super Low fan speed.
- Operation stops after 8 hours.

Indoor Fan Speed Control

- High, Medium and Low.
- Automatic Fan Speed Mode
  - Heating : Fan speed varies from Me → SLo in accordance with indoor heat exchanger.
  - Cooling : Fan rotates at Hi and Me speed. Deodorizing control is available.
  - Soft Dry : Fan rotates at SLo speed. Deodorizing control is available.

Airflow Direction Control

- Automatic air swing and manual adjusted by remote control for vertical airflow.
- Manually adjusted by hand for horizontal airflow.

Hot-Start Control

- The indoor fan stops until the indoor heat exchanger temperature over 30°C.
- The indoor fan operates at SLo and Lo⁻ when indoor heat exchanger temperature reaches 30°C ~ 42°C.
- Hot start is completed when indoor heat exchanger reaches 42°C.

Outdoor Unit

4-Way Valve Control

- When the unit is switched to “OFF” during Heating operation, 4-way valve stays at Heating Position for 5 minutes.

Overload Protector

- Inner protector (Compressor, Fan Motor).

60 Secs. Forced Operation Control

- Once the compressor is activated, it does not stop for 60 secs. (Stops immediately with remote control stop signal.)

Outdoor Fan Operation Control

- 4-pole induction motor (2-speed)
- For Cooling or Soft Dry Operation
  Hi-speed … when outdoor temperature reaches to 31°C
  Lo-speed … when outdoor temperature reaches to 29°C
- For Heating Operation
  Hi-speed ... when outdoor temperature reaches to 13.5°C.
  Lo-speed ... when outdoor temperature reaches to 15.5°C.
- For Over-heating Protection, the Fan is switched ON or OFF depending on the piping temperature and the outdoor temperature.

Deice Control

- To prevent frosting at outdoor heat exchanger during Heating Operation.

2-Way Valve Control

- 2-way valve is ON for 1 minutes after compressor start. Other than this, 2-way valve is OFF. (A242K only)

Safety Precautions

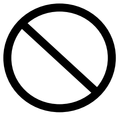
Before operating, please read the following “Safety Precautions” carefully.

To prevent personal injury, injury to others and property damage, the following instructions must be followed.

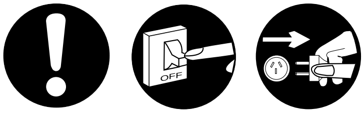
- Incorrect operation due to ignoring of instructions will cause harm or damage, the seriousness of which is classified as follows :

⚠ **Warning**	⚠ **Caution**
This sign warns of death or serious injury.	This sign warns of injury or damage to property only.

- The instructions to be followed are classified by the following symbols :



This symbol (with a white background) denotes an action that is prohibited.



These symbols (with a black background) denote actions that are COMPULSORY.

Installation Precautions

⚠ Warning

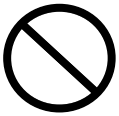
- **Do not install, remove and reinstall the unit yourself.**
  Improper installation will cause leakage, electric shock or fire. Please engage an authorized dealer or specialist for the installation work.

⚠ Caution

- **This room air conditioner must be earthed.**

Improper grounding could cause electric shock.

- **Do not install the unit in a place where there may be explosive gas leaks.**



Gas leaks near the unit could cause fires.

- **Ensure that drainage piping is connected properly.**

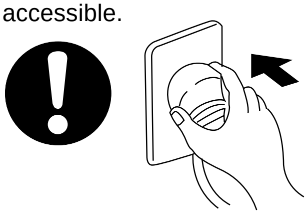
Otherwise, water will leak out.

Operation precautions

⚠ Warning

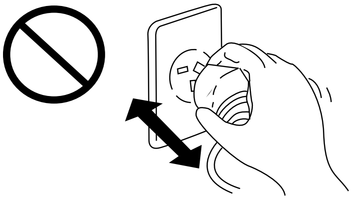
- **Insert the power plug properly.**

Heat generated by a loose power plug could cause electric shock or fire.
Electrical outlet and power plug shall be easily accessible.



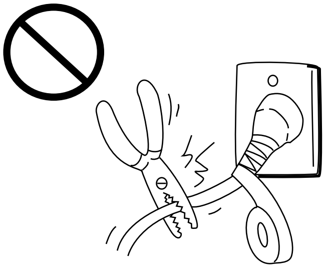
- **Do not operate or stop the unit by inserting or pulling out the power plug.**

It could cause electric shock or fire.



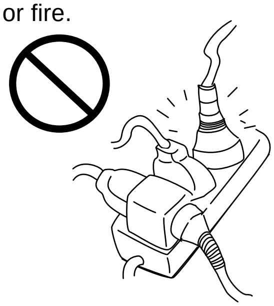
- **Do not damage or use an unspecified power cord.**

It will cause electrical shock or fire.



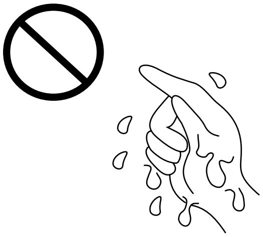
- **Do not modify the length of the power cord or use an extension cord.**

It could cause electric shock or fire.



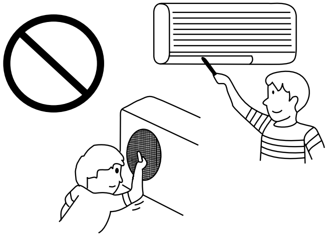
- **Do not operate the unit with wet hands.**

It could cause an electric shock.



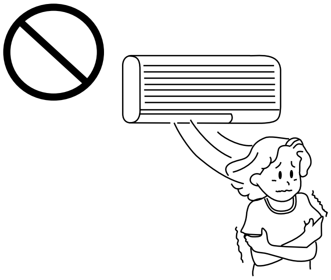
- **Do not insert finger, sticks or other objects into the units.**

It could lead to physical injury and cause damage to the units.



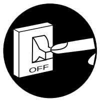
- **Do not be directly exposed to the cold airstream for too long.**

It could lead to health problems.

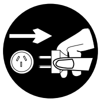


- **If there is a smell of burning, stop the air conditioner and disconnect the power supply.**

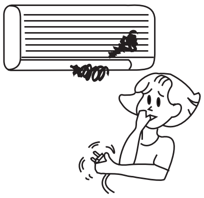
The heat generated could cause electric shock or fire. Please consult an authorized dealer or service centre.



Switch off the breaker.

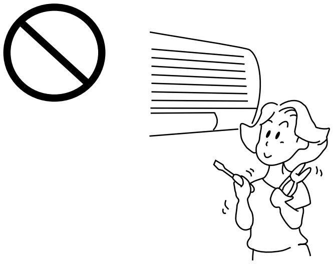


Disconnect the power plug.



- **Do not try to repair the unit yourself.**

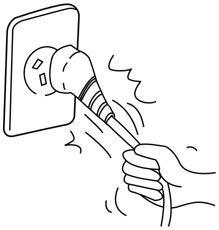
It could lead to fire or cause an electric shock. Please call an authorized dealer or service centre.



⚠ Caution

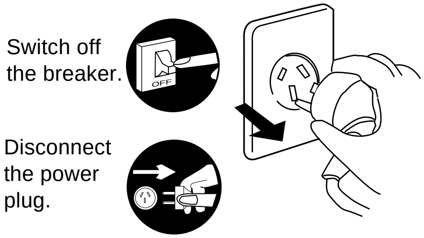
■ **Do not remove the power plug by pulling the cord.**

Hold the plug when disconnecting the plug from the wall outlet.



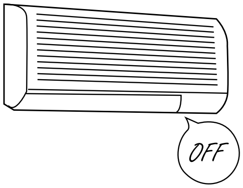
■ **Switch off the power supply if the unit is not going to be used for a long period of time.**

If dust accumulates on the plug, it will generate heat and this could cause a fire.


Switch off the breaker.
OFF
Disconnect the power plug.

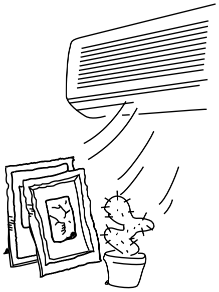
■ **When cleaning the unit, remove the plug.**

This is to prevent injury due to the rotating fan in the unit.



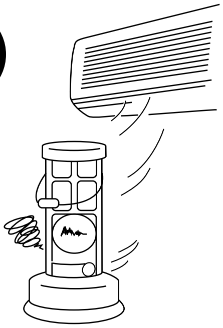
■ **Do not use for other purposes.**

Do not use for preservation purposes. It will affect food quality, animals or plants.



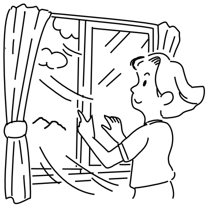
■ **Do not place combustor in the path of the airflow from the unit.**

Incomplete combustion could cause toxic gas (CO) poisoning.



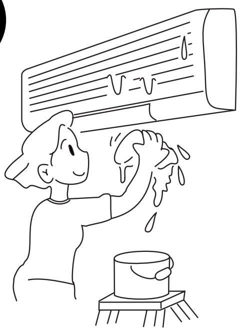
■ **Ventilate the room regularly.**

Since windows are kept closed, it does good to open them periodically to ventilate the room.



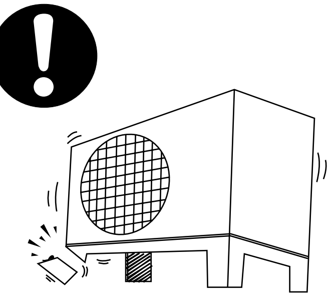
■ **Do not wash the unit with water.**

It could cause an electric shock.



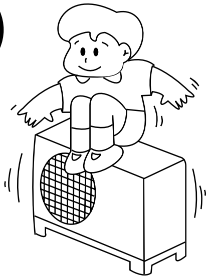
■ **Inspect the unit for any damage.**

Ensure that the necessary repairs are carried out.



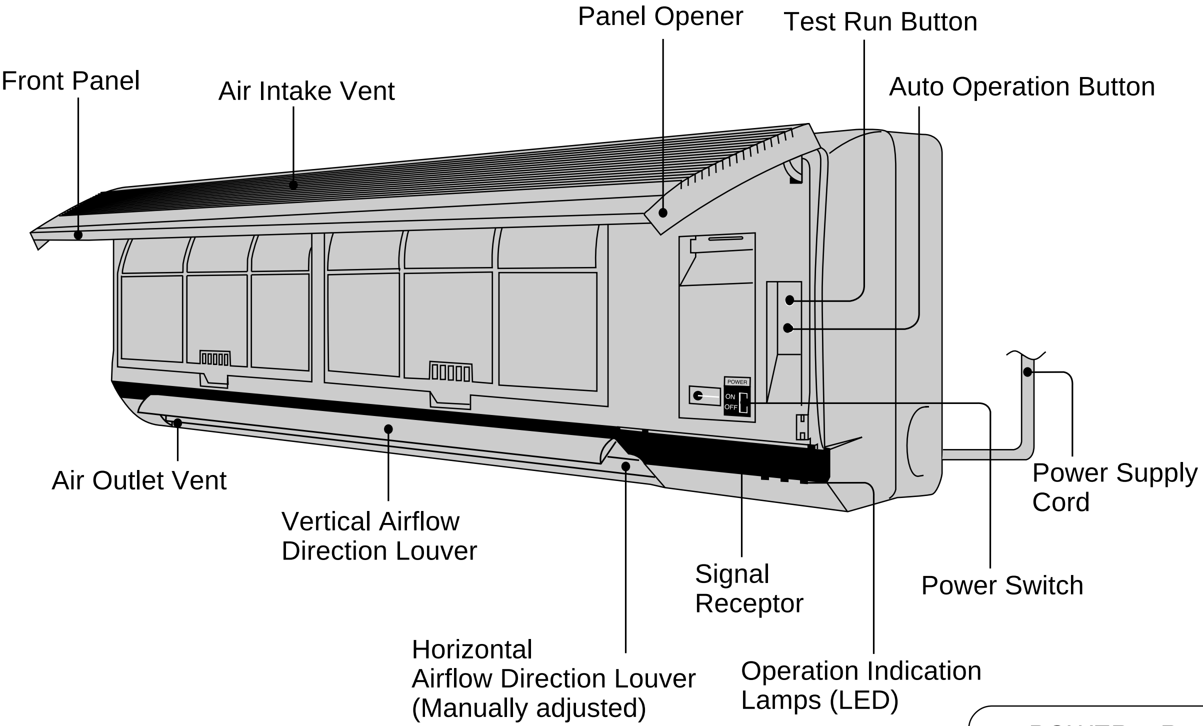
■ **Do not sit or place anything on the outdoor unit.**

You might fall off or the unit might collapse.



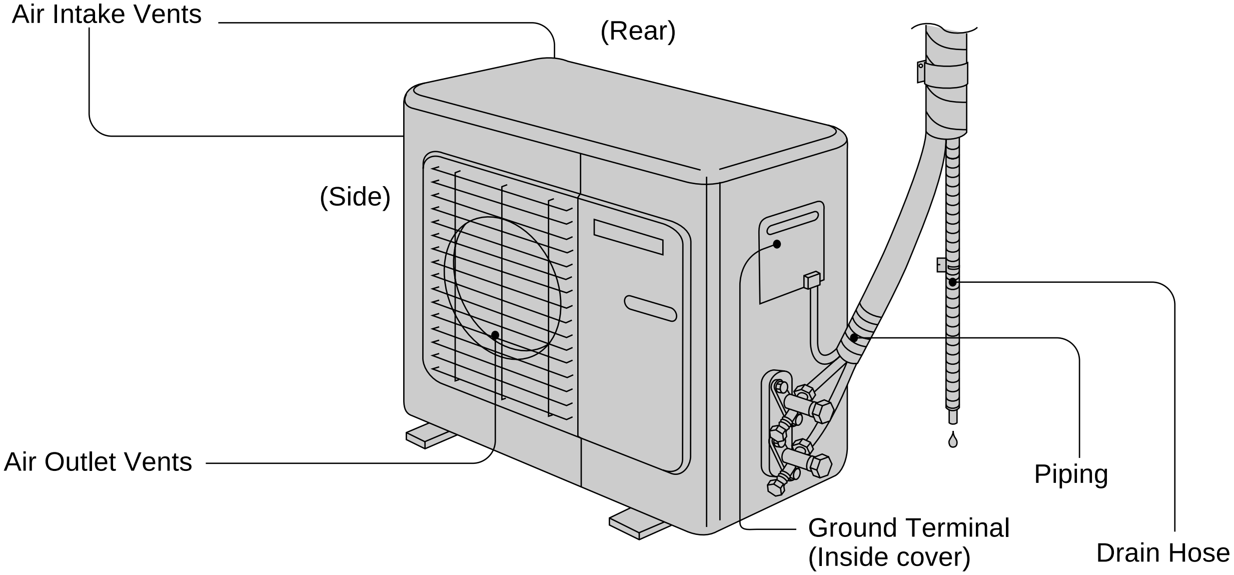
Name of Each Part

Indoor unit


Panel Opener
Test Run Button
Front Panel
Air Intake Vent
Auto Operation Button
POWER
ON
OFF
Power Supply Cord
Air Outlet Vent
Vertical Airflow Direction Louver
Signal Receptor
Power Switch
Horizontal Airflow Direction Louver (Manually adjusted)
Operation Indication Lamps (LED)

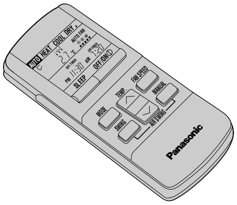
▭ POWER : Red
▭ SLEEP : Orange
▭ TIMER : Orange

Outdoor unit

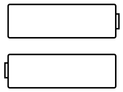

Air Intake Vents
(Rear)
(Side)
Air Outlet Vents
Piping
Ground Terminal (Inside cover)
Drain Hose

Accessories

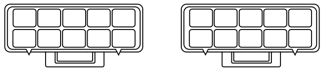
Remote Control



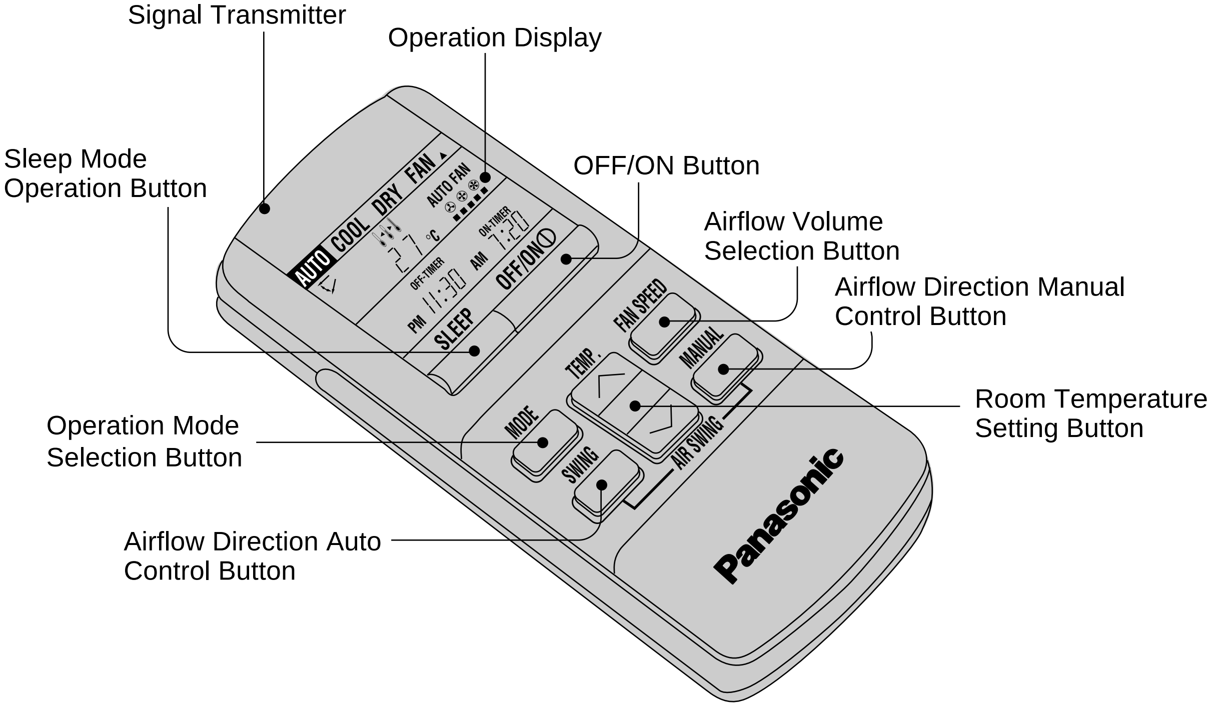
Two R03 (AAA) dry-cell batteries or equivalent



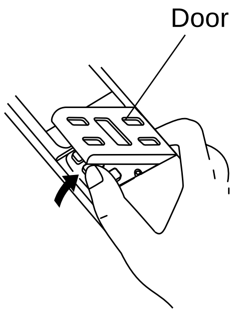
Air Purifying Filters
(Catechin Air Purifying Filters and Deodorizing Filters)

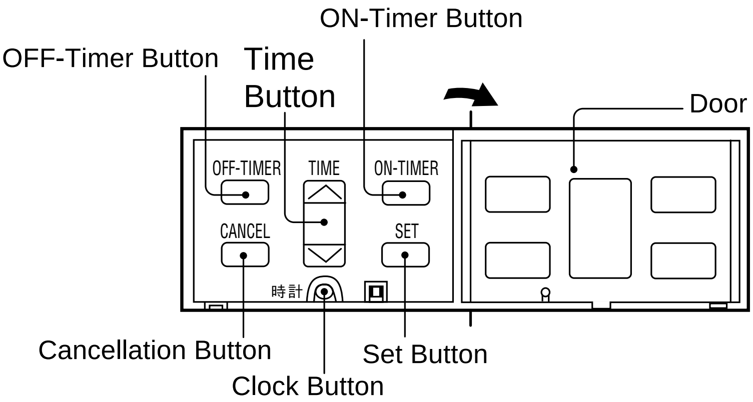


Remote control


Signal Transmitter
Operation Display
Sleep Mode Operation Button
OFF/ON Button
Airflow Volume Selection Button
Airflow Direction Manual Control Button
Room Temperature Setting Button
Operation Mode Selection Button
Airflow Direction Auto Control Button
AUTO COOL DRY FAN
AUTO FAN
OFF-TIMER
ON-TIMER
PM
AM
OFF/ON
SLEEP
FAN SPEED
TEMP.
MANUAL
MODE
SWING
AIR SWING
Panasonic

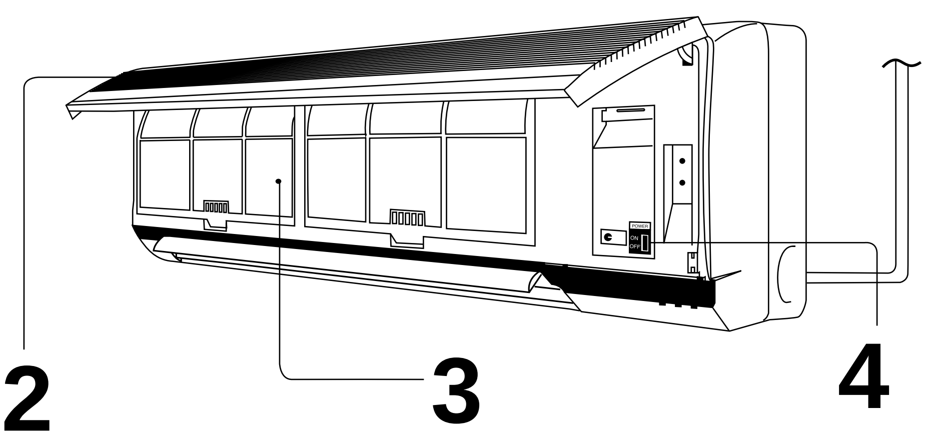
Separate displays and functions are available when the door is opened.




OFF-Timer Button
Time Button
ON-Timer Button
Door
OFF-TIMER
TIME
ON-TIMER
CANCEL
SET
時計
Cancellation Button
Set Button
Clock Button

Preparation Before Operation

Before operating the unit

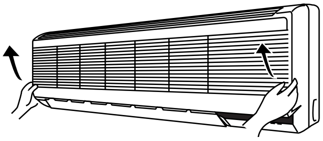


1

- **Connect the power supply cord to an independent power supply.**

2

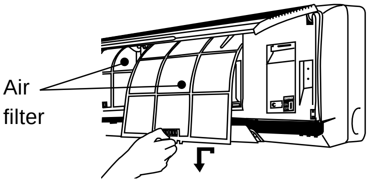
- **Open the front panel.**



Hold the panel openers at both sides and pull up the front panel.

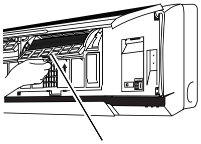
3

- **Remove air filter.**



Hold the tab to raise up slightly and then pull down.

- **Insert air purifying filter. Insert the air filters.**

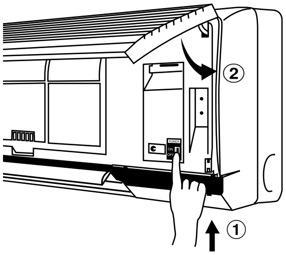


Be careful not to hurt your hands by metal parts.

Air purifying filter

4

- **Switch on the power switch and close the front panel.**

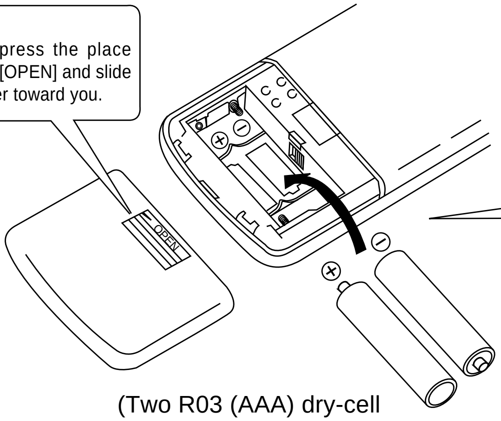


Use the air conditioner under the following conditions.

(Unit in °C)

DBT: Dry Bulb Temp WBT: Wet Bulb Temp	Cooling				Heating			
	Indoor		Outdoor		Indoor		Outdoor	
	DBT	WBT	DBT	WBT	DBT	WBT	DBT	WBT
Maximum Temperature	32	23	43	26	30	–	24	18
Minimum Temperature	16	11	16	11	16	–	-5	-6

How to insert batteries

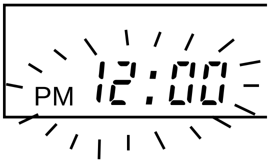


Gently press the place marked [OPEN] and slide the cover toward you.

⊕⊖ Be sure that the (+) and (–) directions are correct.

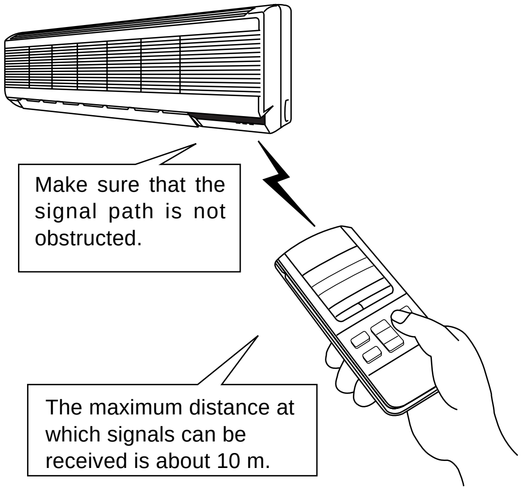
(Two R03 (AAA) dry-cell batteries or equivalent)

- **Fix the cover to the back of the remote control (“PM 12:00” will flash in the operation display.)**



If the display does not appear when the batteries are inserted, remove the batteries and insert them once more.

Operating the remote control



Make sure that the signal path is not obstructed.

The maximum distance at which signals can be received is about 10 m.

- Aim at the signal receptor on the room air conditioner when operating.
- Do not drop or throw the remote control.
- Do not place the remote control in a location that is exposed to direct sunlight or next to a heating unit or other heat source.
- Signal received sound :
  One short beep or one long beep.

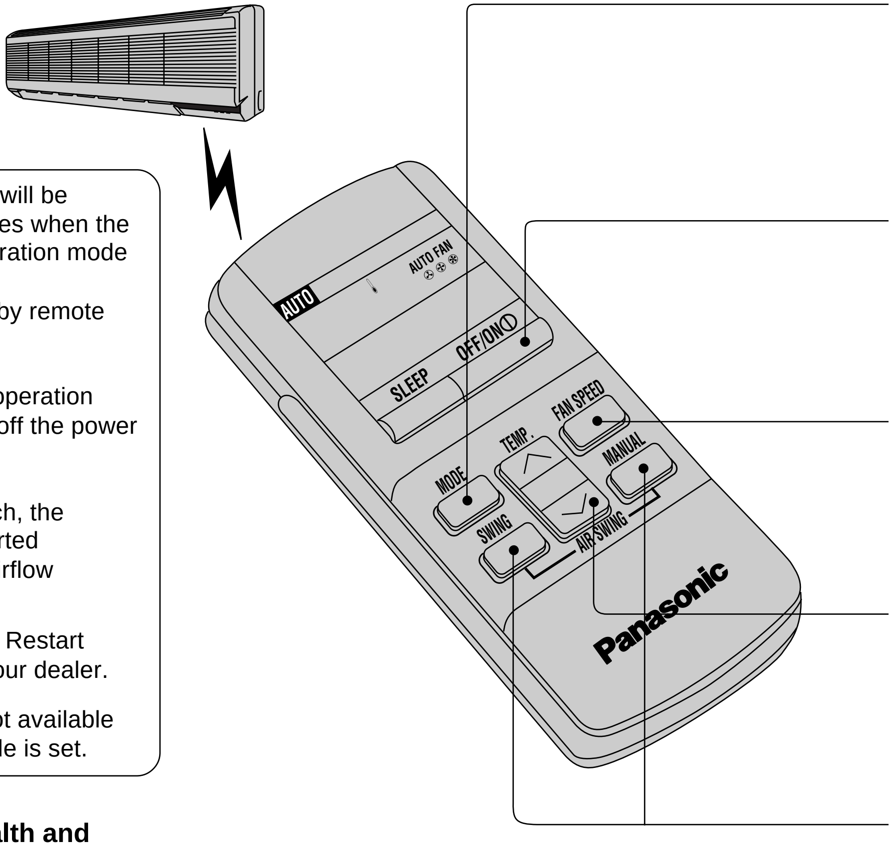
Set the power switch to “○” (OFF) when:

- **The air conditioner is not going to be used for an extended period of time.**
  If the power switch is left at “I” (ON), approximately 3.25 watts of electric power are used even if the main unit is turned off by remote control.
- **There is a danger of lightning.**
  The air conditioner is provided with a built-in protective device, but the control equipment may be adversely affected depending on the extent of lightning activity.

Regarding the batteries.

- The batteries can be used for approximately one year.
- Do not use rechargeable (Ni-Cd) batteries, because such batteries differ from standard dry-cell batteries in shape, dimensions and performance.
- Be sure to replace the batteries with two new batteries of the same type.
- Remove the batteries if the air conditioner is not going to be used for an extended period of time.

How to Operate



Auto Restart Control.

- If there is a power failure, operation will be automatically restarted after 3 minutes when the power is resumed with previous operation mode and airflow direction.
  (When the operation is not stopped by remote control.)
- If you do not intend to continue the operation when the power is resumed, switch off the power switch at main unit or power supply.

  When you switch on the power switch, the operation will be automatically restarted with previous operation mode and airflow direction.

Note: 1. If you do not require Auto Restart Control, please consult your dealer.

2. Auto Restart Control is not available when Timer or Sleep Mode is set.

Recommended temperature for health and comfort.

For Heating : 20°C – 24°C
For Cooling : 26°C – 28°C
For Soft Dry : 1°C – 02°C lower than room temperature.

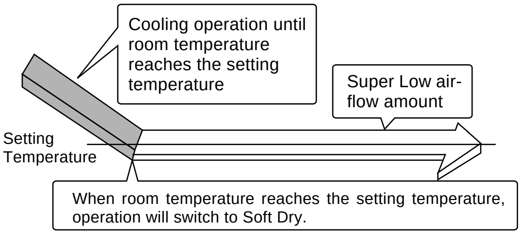
<Operation Details>

AUTO – Automatic Operation.

- Once the Automatic Operation is selected, the indoor temperature sensor operates automatically to select the desired operation mode with Cooling, Soft Dry or Heating.
- The Operation mode changes every hour, when necessary.
- Temperature is not displayed on remote control during Auto mode operation.

DRY – Soft Dry Operation.

- Soft Dry is a very gentle Cooling Operation consisting primarily of dehumidifying. It does not lower the room temperature very much.



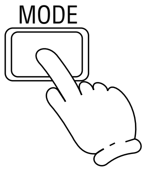
Cooling operation until room temperature reaches the setting temperature

Super Low air-flow amount

Setting Temperature

When room temperature reaches the setting temperature, operation will switch to Soft Dry.

1



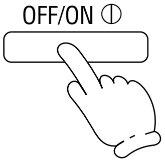
Press to select operation mode.

- The display changes in the order

AUTO → HEAT → COOL → DRY

each time the button is pressed.

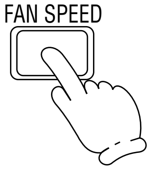
2



Press to start the operation.

- Operation indication lamp (RED) will light up.
- Press once more, to stop the operation.

3



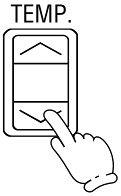
Press to select airflow volume.

- The display changes in the order.

AUTO FAN ➨ ▮ ➨ ▮▮▮ ➨ ▮▮▮▮▮

Automatic Low Medium High

4



Press to select room temperature.

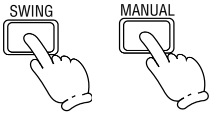
- Heating, Cooling, Soft Dry – Select temperature as desired. (16°C ~ 30°C)
- Automatic. (Refer <Operation Details>)

◀ 2°C lower than standard

standard

▶ 2°C higher than standard

5



Press MANUAL ☐ continuously.

- The vertical airflow direction louver will move up and down. Release the button when the louver is at the desired position.

Press SWING ☐.

- Cooling & Soft Dry – The vertical airflow direction louver will swing up and down automatically.

  Heating – When the discharge air temperature is low such as at the start of heating operation, the air blows at horizontal level. As the temperature rises, the hot air blows in a downwards direction.

  To stop the automatic airflow direction operation, press MANUAL ☐ button.

HEAT – Heating Operation

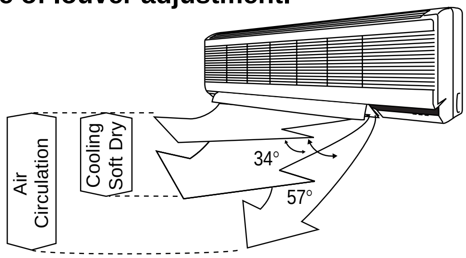
- **Defrosting Operation**
  Depend on the outdoor temperature, the operation occasionally stops to melt the frost on the outdoor unit.

- Heat is obtained from outdoor air to warm up the room. When the outdoor ambient air temperature falls, the heating capacity of the unit might be reduced.

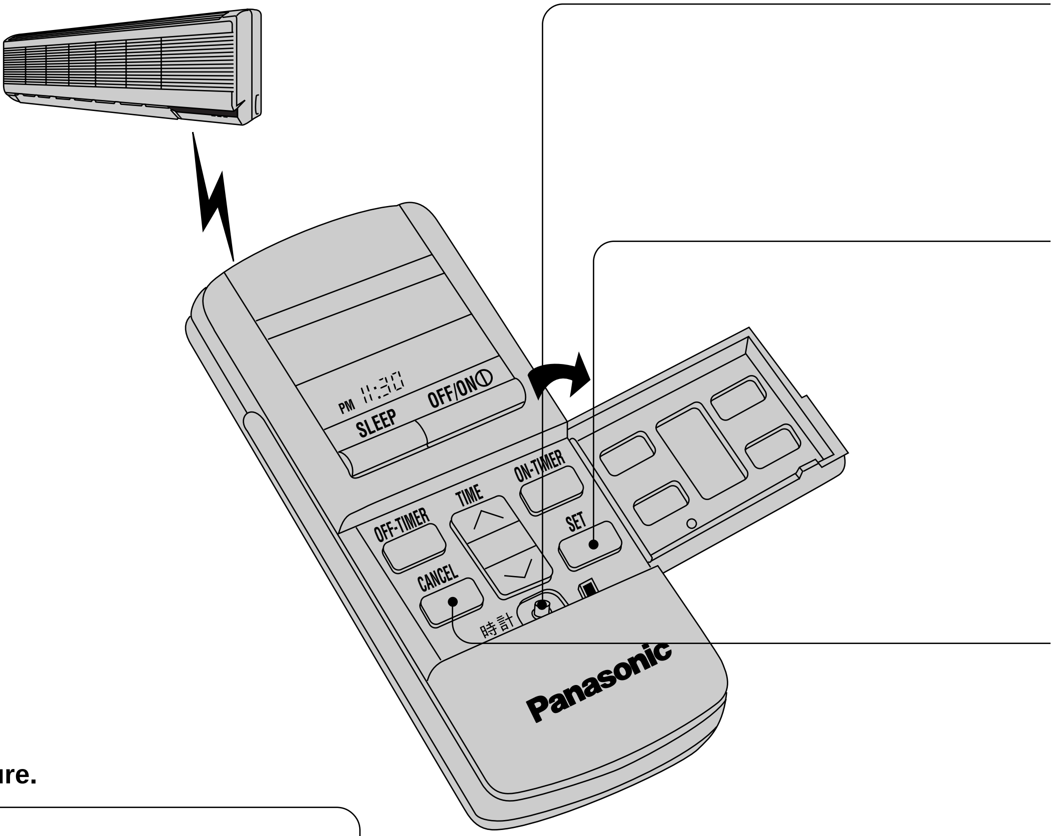
Automatic Airflow Volume.

- The speed of the indoor fan is adjusted automatically according to the operation. The indoor fan stops occasionally during cooling operation.

Range of louver adjustment.

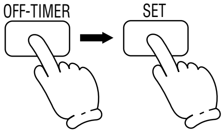


Setting the Timer


PM 11:30
SLEEP
OFF/ON
OFF-TIMER
TIME
ON-TIMER
SET
CANCEL
時計
Panasonic

If there is a power failure.

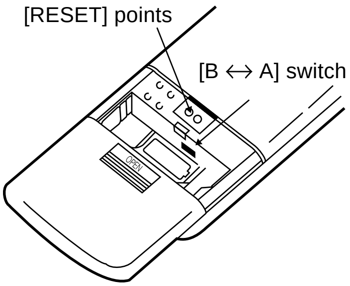
To reset the Timer.
(Example) If the OFF Timer has been set.


OFF-TIMER
SET

- Even if there is a power failure, the setting time is still stored in the memory because the remote control is a battery operated type.

<Note>

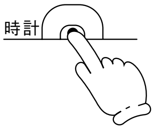
Regarding remote control.


[RESET] points
[B ↔ A] switch
OPEN

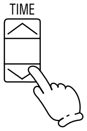
- If the current time is not set correctly, correct Timer setting will not be possible.
- When the Timer is set, the current time display will vanish.
- [RESET] points will clear the memory once they are shorted.
- [B ↔ A] switch is used when two air conditioners units have been installed in one room. Please consult your dealer.

To set the current time.

■

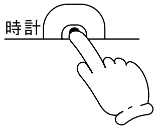


Set hours and minutes



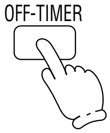
.... to advance the time

.... to reverse the time



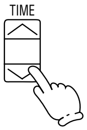
To set the Timer.

- OFF Timer



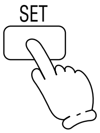
The “OFF-TIMER” will blink.

Set hours and minutes



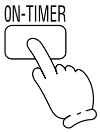
.... to increase 10 minutes each step.

.... to decrease 10 minutes each step.



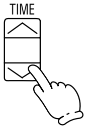
The Timer indication lamp at main unit will light up. LED colour: Orange.

- ON Timer



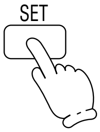
The “ON-TIMER” will blink.

Set hours and minutes



.... to increase 10 minutes each step.

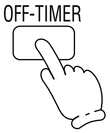
.... to decrease 10 minutes each step.

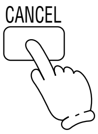


The Timer indication lamp at main unit will light up. LED colour: Orange.

To cancel the Timer.

- OFF Timer

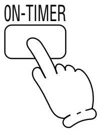




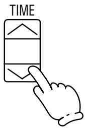
- The Timer indication lamp at main unit will go off.
- To cancel the ON Timer, follow the same procedure.

To change the Timer setting time.

- (Example) To change the ON Timer setting time.

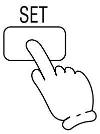


Change hours and minutes setting



.... to increase 10 minutes each step.

.... to decrease 10 minutes each step.



Timer

- The ON Timer and OFF Timer can only be set once during a day.
- The operation will start before the actual setting time with ON Timer setting.

Cooling and Soft Dry : 15 minutes before
Heating and Automatic : 30 minutes before

This is to allow time to attain your desired set temperature.

- Setting the OFF Timer.

This is useful for saving electricity costs incurred by forgetting to turn off the air conditioner.

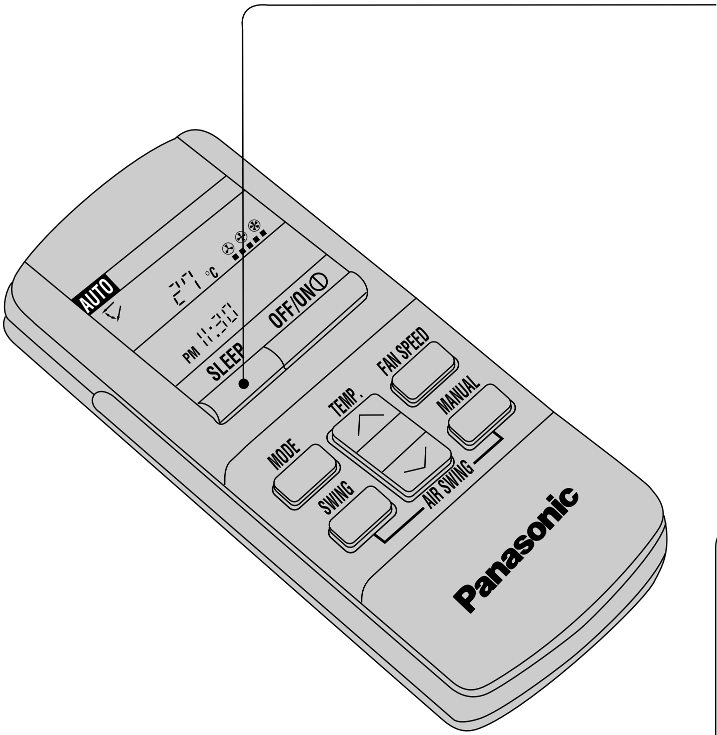
- Setting the ON Timer.

If the air conditioner is set before you go out, the room temperature will be close to your desired temperature when you return.

Convenient Operation

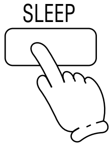
Sleep Mode

This is to gain a comfortable room temperature while sleeping.


AUTO
21 °C
PM 11:30
SLEEP
OFF/ON
FAN SPEED
TEMP.
MANUAL
MODE
SWING
AIR SWING
Panasonic

To set Sleep Mode.

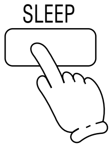
- Press



(The sleep indication lamp on the main unit will light up.)

To cancel Sleep Mode.

- Press once more



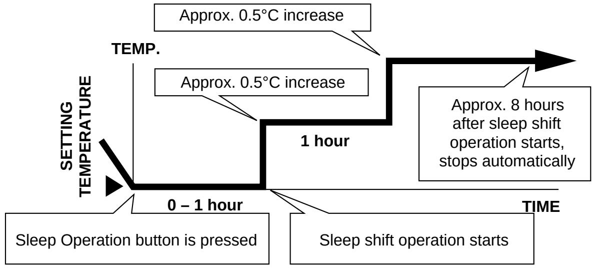
(The sleep indication lamp on the main unit will switch off.)

Sleep Mode Operation.

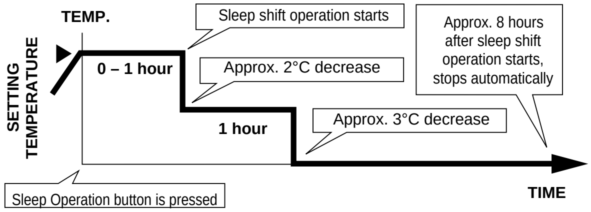
- When the room temperature reaches the setting temperature or after 1 hour of operation, sleep shift operation starts and the airflow volume will automatically change to low.
- Sleep Mode Operation time is 8 hours.
- When using together with the Timer, the Timer has priority.

<Information>

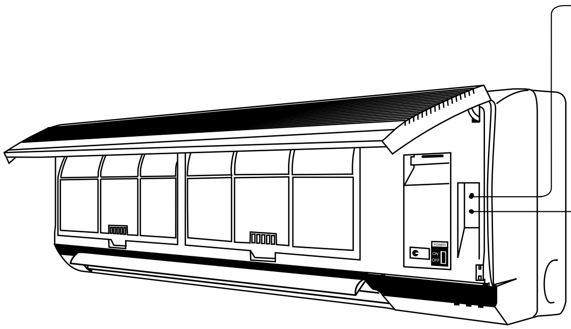
- Cooling or Soft Dry operation for sleep mode movement will start to avoid overcooling.



- Heating Operation for Sleep Mode movement will start to avoid overheating.



When the remote control cannot be used



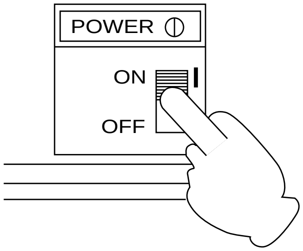
Test Run Button.
(Use when installing and moving)

Auto Operation Button.

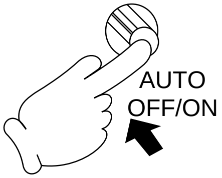
- When the remote control cannot be used, press Auto operation button to run automatic operation.
  (Airflow direction setting will be automatic.)

To set Auto Operation.

- **Confirm the power switch is at "I" (ON).**



- **Press Auto Operation Button.**
  (The operation indication lamp will blink for 20 seconds, and then light up)
  - If the button is pressed once more, the air conditioner will stop.
    (The operation indication lamp will switch off.)

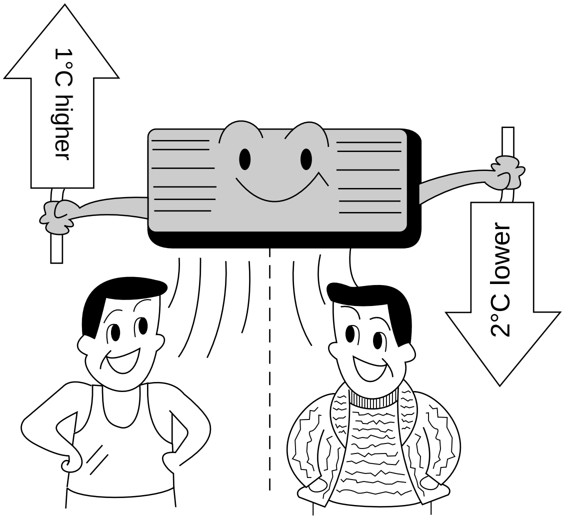


OFF/ON remote control signal receiving sound

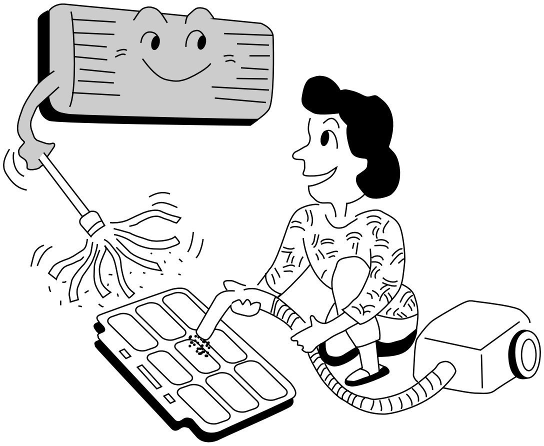
- The Remote Control Signal receiving sound can be omitted as desired.
- To switch OFF the signal receiving sound, press Auto operation Button for 10 seconds or more. At the same time, Automatic Operation starts.
  (To switch ON, press Auto operation Button once more for 10 seconds or more.)

Operation Hints

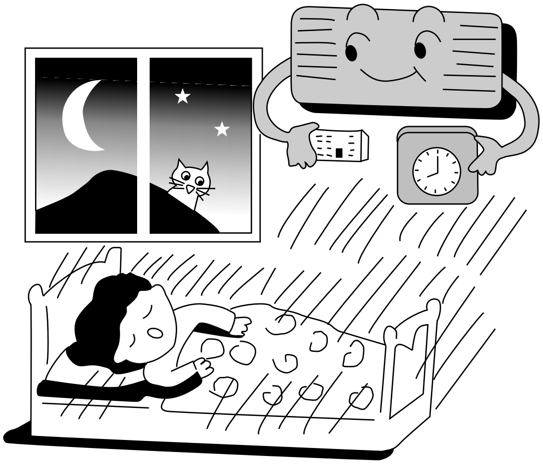
- Adjust room temperature properly. Set the temperature 1°C higher (Cooling Operation) or 2°C lower (Heating Operation) than actually desired.
  Approximately 10% of electricity costs can be saved.



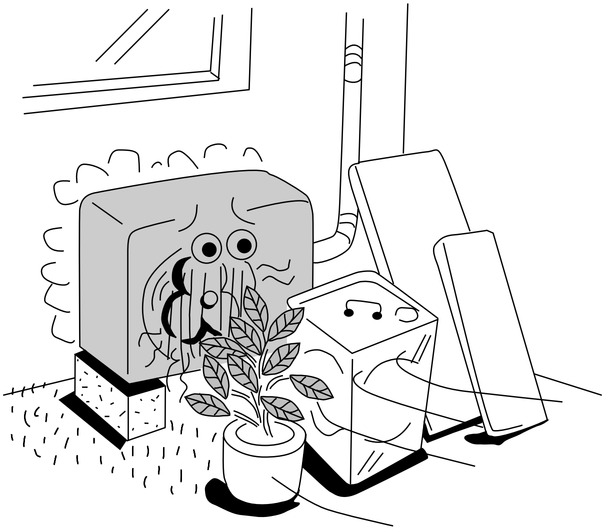
- Clean the air filter regularly. Blockage in the air filter reduces the airflow and lowers the cooling or heating. Clean at least once every 2 weeks. Otherwise, about 6% of electricity cost will be wasted.



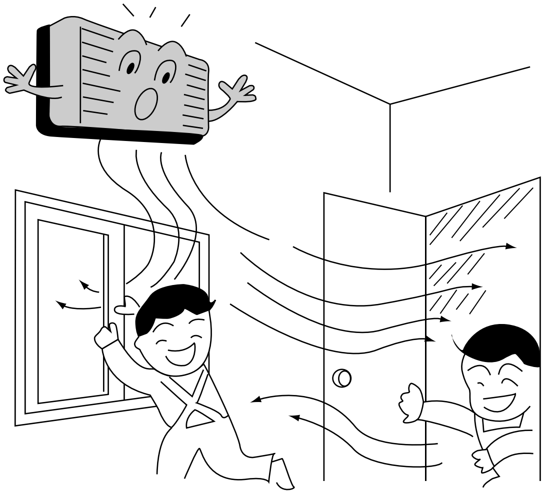
- Prevent wastage with the Timer. Use Timer when sleeping or going out to save electricity cost.



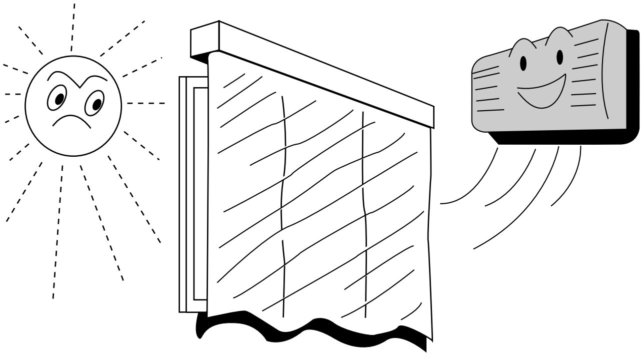
- Do not block the air outlet vents at outdoor unit. Otherwise, it will lower the cooling or heating performance.



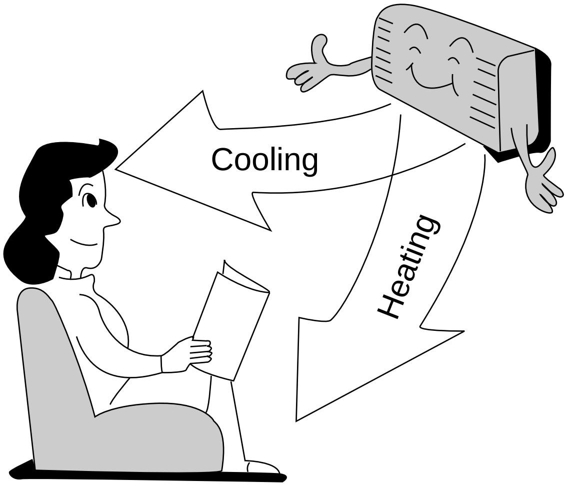
- Make sure that the doors and windows are shut. Otherwise, cooling and heating performance will be reduced and electricity cost is wasted.



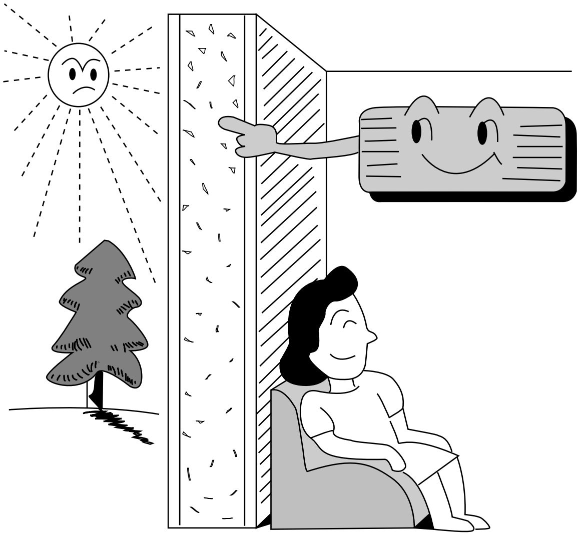
- Keep blinds or curtains closed. Do not let sunshine enter the room directly. About 5% of electricity cost can be saved.



- Proper airflow direction adjustment. Set the airflow direction louvers horizontal for cooling operation and downwards for Heating Operation. Operation result will be better.



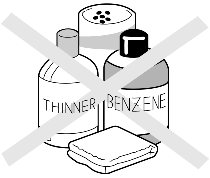
- Use insulating material for better performance. Use insulating material during construction or renovations. It will save electricity cost.



Better Care and Maintenance

Regular care and maintenance will extend the life of the air conditioner and prevent wastage of electricity. Before performing any maintenance procedure, be sure to switch off the main power supply.

Caution



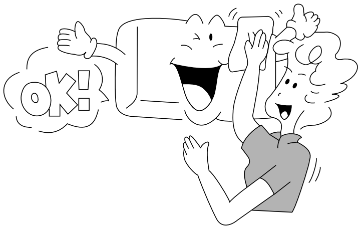
Do not use water or volatile liquids.

- Do not make air conditioner wet, as there is the danger that it could cause electric shocks.
  Be sure not to apply water when cleaning or at any other time.
- Using water above 40°C could cause deformation and/or discolouration.
- Volatile liquids such as thinner or benzene may damage the air conditioner.

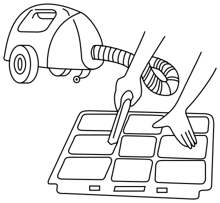
Cleaning the air conditioner and air filters

Once every 2 weeks is recommended.

- **Clean the air conditioner.**
  Wipe gently with a soft, dry cloth.



- **Clean the air filters.**



- To remove the dust adhering to the filters, either use a vacuum cleaner, or wash them in water and dry in the shade.
- Re-insert the filters correctly at the left and right, with the side marked [FRONT] facing forward.
- Purchase replacement filters from your air conditioner dealer if the air filters become damage.
  Air Filter No. CWD00231 (right)
  CWD00232 (left)

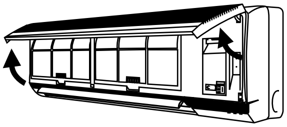
Cleaning of front panel (Must be removed before washing)

To clean the front panel, gently wash with sponge. Wipe dry or dry in shade.

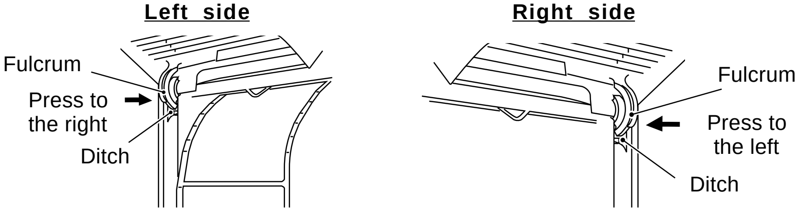
IMPORTANT:
- It may lead to shaft damage if the front panel is removed or fixed without releasing the shaft.
- Be careful not to drop the front panel.

- **To remove front panel.**

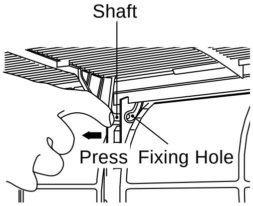
1. **Raise the front panel.**



2. **Release either one of the fulcrum from the ditch.**



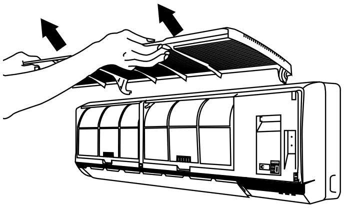
3. **Release the shaft from the fixing hole.**



4. **Repeat step 2 to release the other fulcrum.**

(Illustration is shown as above)

5. **Remove the front panel.**

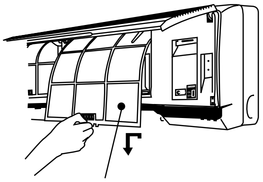


- **To fix the front panel, reverse the above procedure accordingly.**

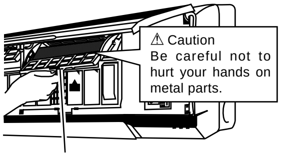
Replacement of air purifying filters

Recommended about once every 3 months.

1 Remove the air filters.

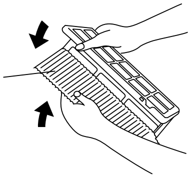


2 Remove the air purifying filters.

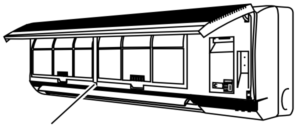

Air purifying filter

⚠ Caution
Be careful not to hurt your hands on metal parts.

3 Remove the filters from the filter frame.



<Note>

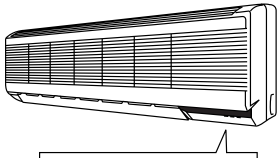

Sample colour

- If air purifying filters turn the same colour as the sample colour attached to the indoor unit within a three month period, replace the filters.
- Re-insert the filters correctly at the left and right with the side marked [FRONT] facing forward.
- Dusty filters cannot be re-used, even if they are cleaned and washed.
- Purchase replacement filters from your air conditioner dealer.
- Part number for air purifying filters: **CZ-SFD50N**
- **Note:**
  Catechin is natural brown element. The filter is coated with catechin in order to prevent the growth of bacteria and viruses.

When not using the air conditioner for a long period

1 Operate the air conditioner for 2 to 3 hours.

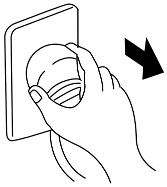
- Type of operation: Cooling.
- Temperature setting: 30°C



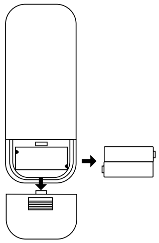
In order to dry out the internal mechanisms

2 For air conditioners with a power plug, stop operation by remote control and pull out the power plug.

Note: If the unit is not off by remote control, the unit will operate when you plug in (because of Auto-restart Control is provided).



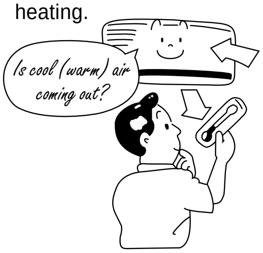
3 Remove the batteries from the remote control.



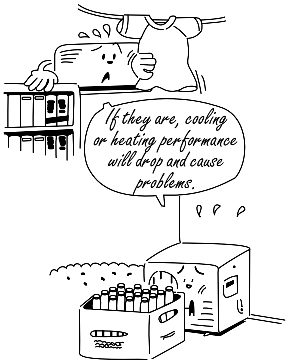
Pre-season inspection (The earlier the better)

- **Is the discharge air cold (warm)?**

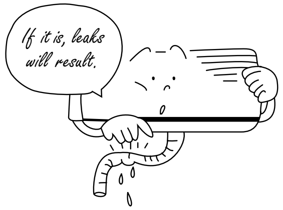
  Operation is normal if, 15 minutes after the start of operation, the temperature difference between the air intake and outlet vents is 8°C or above for cooling and 14°C or above for heating.


Is cool (warm) air coming out?

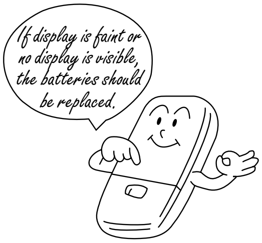
- **Are the air outlet vents and air intake vents obstructed?**


If they are, cooling or heating performance will drop and cause problems.

- **Is the drain hose cracked or crushed?**

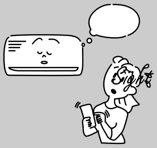
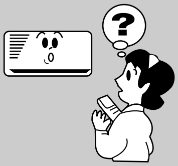
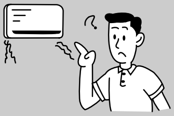
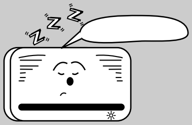
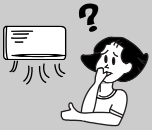

If it is, leaks will result.

- **Are the remote control batteries in good condition?**


If display is faint or no display is visible, the batteries should be replaced.

Troubleshooting

Normal operation

Q Is it okay?	**A** This is the answer.
 **Air conditioner has been restarted, but does not operate for 3 minutes.**	This is to protect the air conditioner. Wait until the air conditioner begins operating.
During Soft Dry Mode operation, the air conditioner stops.	Soft Dry Mode operation is a very gentle cooling operation consisting primarily of dehumidifying. The air conditioner may stop for approximately 6 minutes in order to prevent overcooling. If the room temperature rises again, the operation will recommence.
 **Airflow does not begin immediately during Heating Operation.**	If the airflow begins before its temperature become warm, it will cause an undesired cooling effect. In order to prevent this, the airflow will not begin until it is sufficiently warm. (The operation lamp will blink until the airflow begins.)
The room has a peculiar odour.	This may be a damp smell exuded by the walls, carpet, furniture or clothing in the room.
A sound like water flowing can be heard. A noise that sounds like the compressed air releasing into atmosphere	This is the sound of refrigerant flowing inside the air conditioner unit. This is the sound of reversing the freon flow inside the unit at the starting and finishing the defrosting during Heating operation.
 **It seems that fog is coming out from the air conditioner.**	Condensation occurs when the airflow from the air conditioner cools the room air.
 **Operation stops for about 12 minutes during heating. (The operation lamp blinks.)**	This is to melt the frost which has accumulated on the outdoor unit (Defrosting Operation). This will take no longer than about 12 minutes, so wait for operation. (Frost accumulates on the outdoor unit when the outdoor temperature is low and the humidity is high.) Water comes out from the outdoor unit.
 **During Automatic Airflow Volume setting, indoor fan stops occasionally.**	This is to remove the smell exuded by the surroundings.

Abnormal operation

The air conditioner does not operate.

- Has the circuit breaker been tripped?
- Has the power plug been removed from the wall outlet?
- Is the power switch at “○” (OFF)?
- Is the Timer being used correctly?
- Has the **REMOTE CONTROLLER B ↔ A** switch been set to “B”?

The air conditioner does not cool effectively.

- Has the temperature been set incorrectly?
- Are the filters dirty?
- Are the intake or outlet vents of the outdoor unit obstructed?
- Are all windows and doors closed?

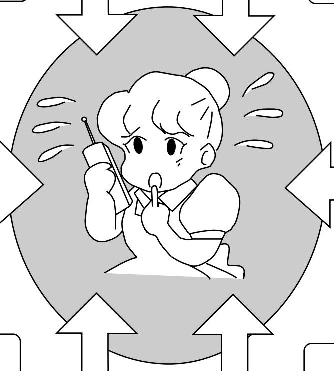
Air conditioner operation noise too loud.

- Is the installation work slanted?
- Is the front grille closed properly?

Call the dealer immediately

If the following conditions occur, immediately turn the power switch to “○” (OFF) and unplug.

- **Abnormal noise is heard during operation.**
- **Switches or buttons do not operate properly.**
- **Water or foreign material gets into the remote control by mistake.**
- **The circuit breaker switches off frequently.**



- **Water leaks from the indoor unit.**
- **Power supply cord and plug become unusually warm.**

⚠ Warning

1) If the supply cord is damaged or need to be replaced, it must be replaced by the manufacturer or its service agent or a similarly qualified person in order to avoid a hazard.

2) Remove power plug or disconnect from the mains before servicing this appliance.

3) Do not repair by yourself.
In case of malfunction of this appliance, do not repair by yourself.
Contact to the sales dealer or service dealer for a repair.

4) The appliance is not intended for use by young children or infirm persons without supervision.

5) Young children should be supervised to ensure that they do not play with the appliance.

6) Turn off the power (Isolation from main power supply).
Pull off the power plug from the receptacle, or switch off the breaker, or switch off the power disconnecting mean to isolate the equipment from the main power supply in case of an emergency.

⚠ Caution

DISCONNECT THE MAINS PLUG FROM THE SUPPLY SOCKET WHEN NOT IN USE, WHERE SUPPLY CONNECTION IS VIA MAINS PLUG.

IMPORTANT

1. WHEN THE POWER CORD IS CONNECTED TO THE MAINS THROUGH A MULTI POLAR SWITCH

THERE MUST BE A MULTI POLAR SWITCH (DISCONNECTING MEANS) WITH A MINIMUM 3 mm CONTACT GAP IN THE FIXED INSTALLATION CIRCUIT.

2. WHEN THE POWER PLUG IS CONNECTED TO THE RECEPTACLE

Replacement or installation of power plugs shall be performed only by authorised/qualified personnels.

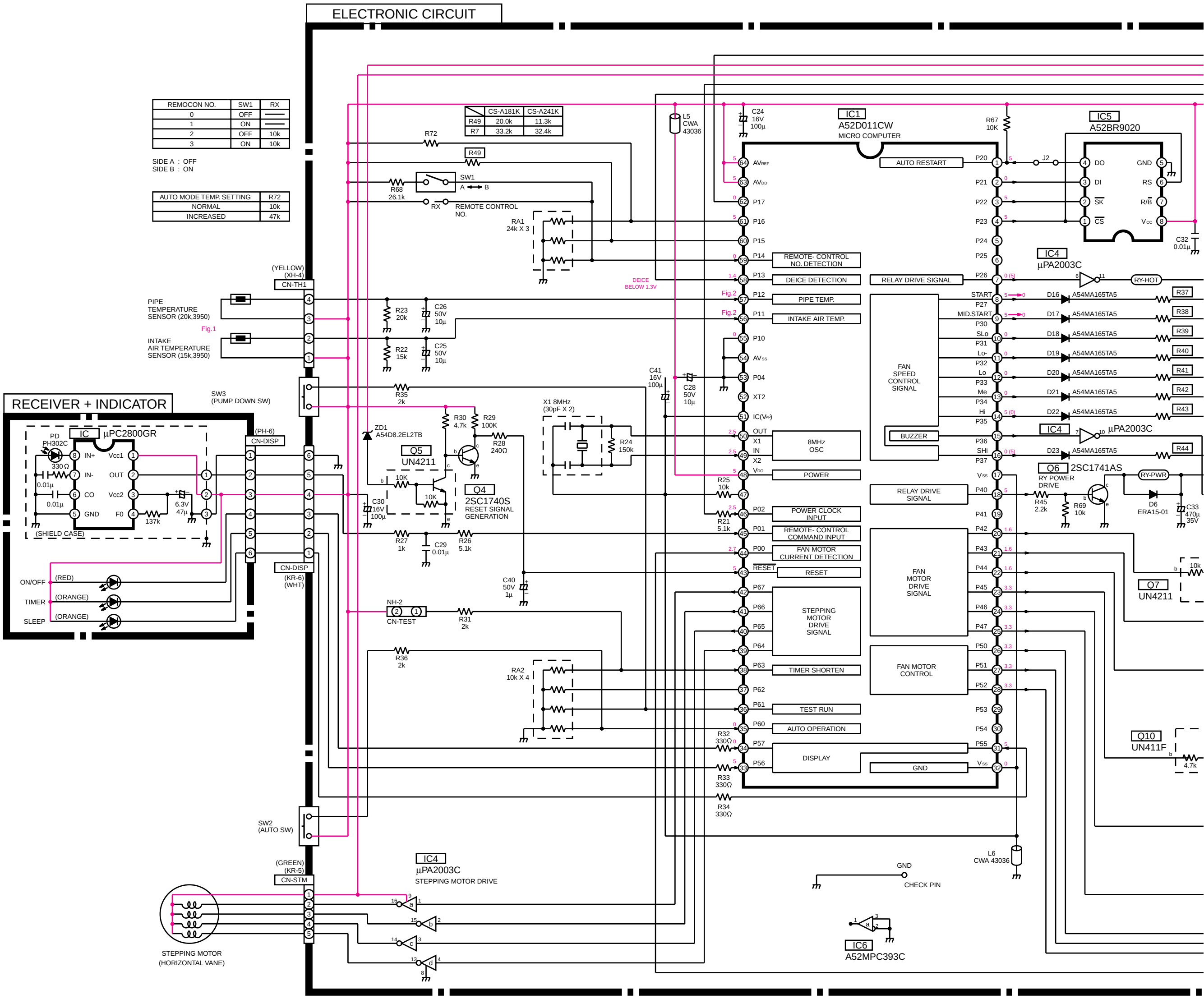
The wires in this main lead are coloured in accordance with the following code :

Green-and-yellow : Earth
Blue : Neutral
Brown : Live

If the colours of the wires in the main lead of this appliance do not correspond with the coloured markings indentifying the terminals in your plug, proceed as follows :
The green-and-yellow wire must be connected to the terminal in the plug which is marked with letter E or by the earth symbol ⏚ or coloured green or green-and-yellow.
The blue wire must be connected to the terminal which is marked with the letter N or coloured black.
The brown wire must be connected to the terminal which is marked with the letter L or coloured red.

• CS-A182KR / CU-A182KR
• CS-A242KR / CU-A242KR

SCHEMATIC DIAGRAM 1/3


ELECTRONIC CIRCUIT
RECEIVER + INDICATOR
IC µPC2800GR
PD PH302C
IN+ Vcc1 IN- OUT CO Vcc2 GND F0
(SHIELD CASE)
ON/OFF (RED)
TIMER (ORANGE)
SLEEP (ORANGE)
PIPE TEMPERATURE SENSOR (20k,3950)
INTAKE AIR TEMPERATURE SENSOR (15k,3950)
(YELLOW) (XH-4) CN-TH1
SW3 (PUMP DOWN SW)
(PH-6) CN-DISP
CN-DISP (KR-6) (WHT)
NH-2 CN-TEST
SW2 (AUTO SW)
(GREEN) (KR-5) CN-STM
STEPPING MOTOR (HORIZONTAL VANE)
IC4 µPA2003C STEPPING MOTOR DRIVE
ZD1 A54D8.2EL2TB
Q5 UN4211
Q4 2SC1740S RESET SIGNAL GENERATION
X1 8MHz (30pF X 2)
SW1 A B
RX REMOTE CONTROL NO.
RA1 24k X 3
RA2 10k X 4
L5 CWA 43036
IC1 A52D011CW MICRO COMPUTER
AUTO RESTART
REMOTE- CONTROL NO. DETECTION
DEICE DETECTION
DEICE BELOW 1.3V
PIPE TEMP.
INTAKE AIR TEMP.
8MHz OSC
POWER
POWER CLOCK INPUT
REMOTE- CONTROL COMMAND INPUT
FAN MOTOR CURRENT DETECTION
RESET
STEPPING MOTOR DRIVE SIGNAL
TIMER SHORTEN
TEST RUN
AUTO OPERATION
DISPLAY
RELAY DRIVE SIGNAL
FAN SPEED CONTROL SIGNAL
BUZZER
FAN MOTOR DRIVE SIGNAL
FAN MOTOR CONTROL
GND
IC5 A52BR9020
IC4 µPA2003C
RY-HOT
RY-PWR
Q6 2SC1741AS RY POWER DRIVE
D6 ERA15-01
Q7 UN4211
Q10 UN411F
L6 CWA 43036
GND CHECK PIN
IC6 A52MPC393C
Fig.1
Fig.2

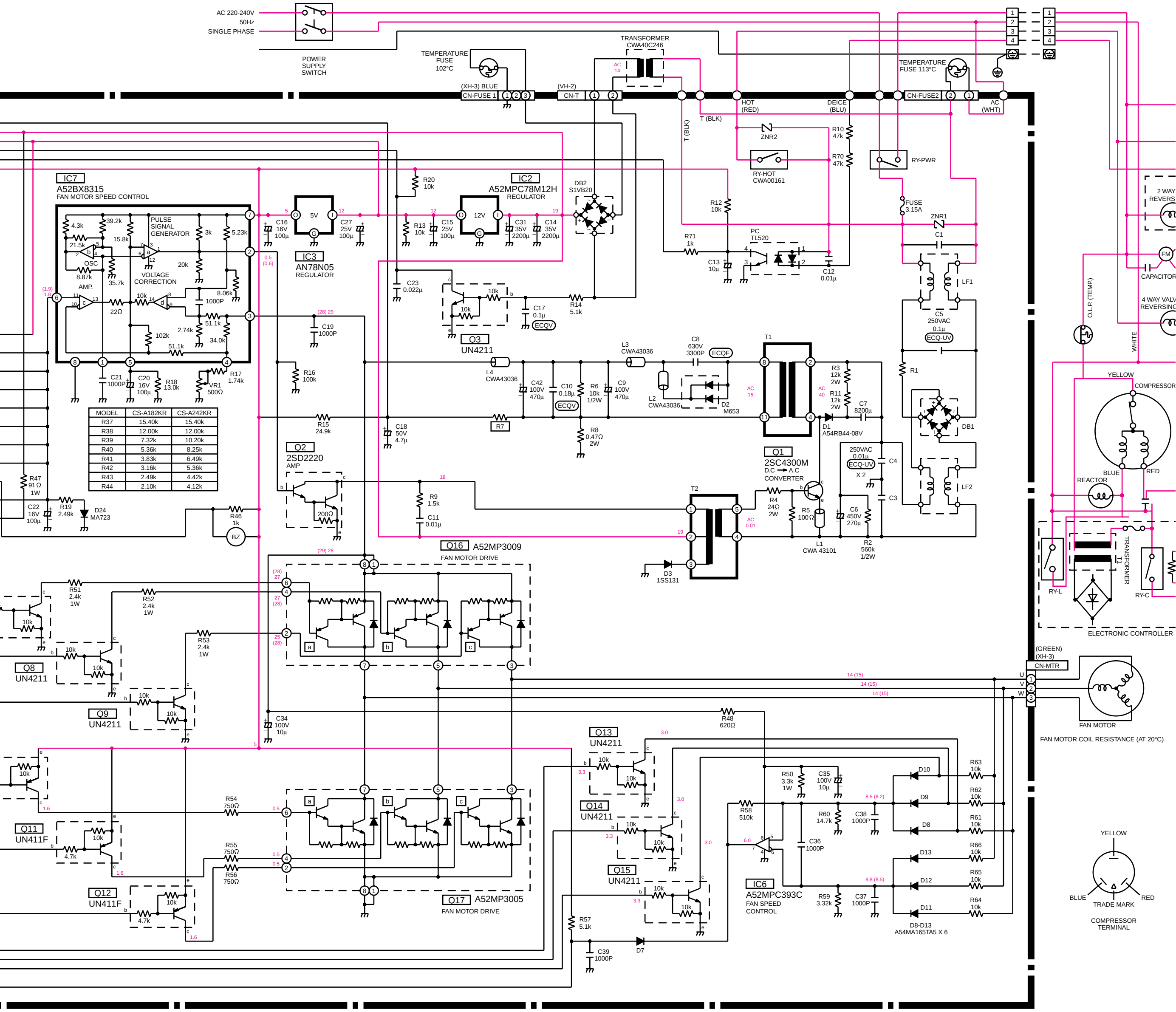
REMOCON NO.	SW1	RX
0	OFF	—
1	ON	—
2	OFF	10k
3	ON	10k

SIDE A : OFF
SIDE B : ON

AUTO MODE TEMP. SETTING	R72
NORMAL	10k
INCREASED	47k

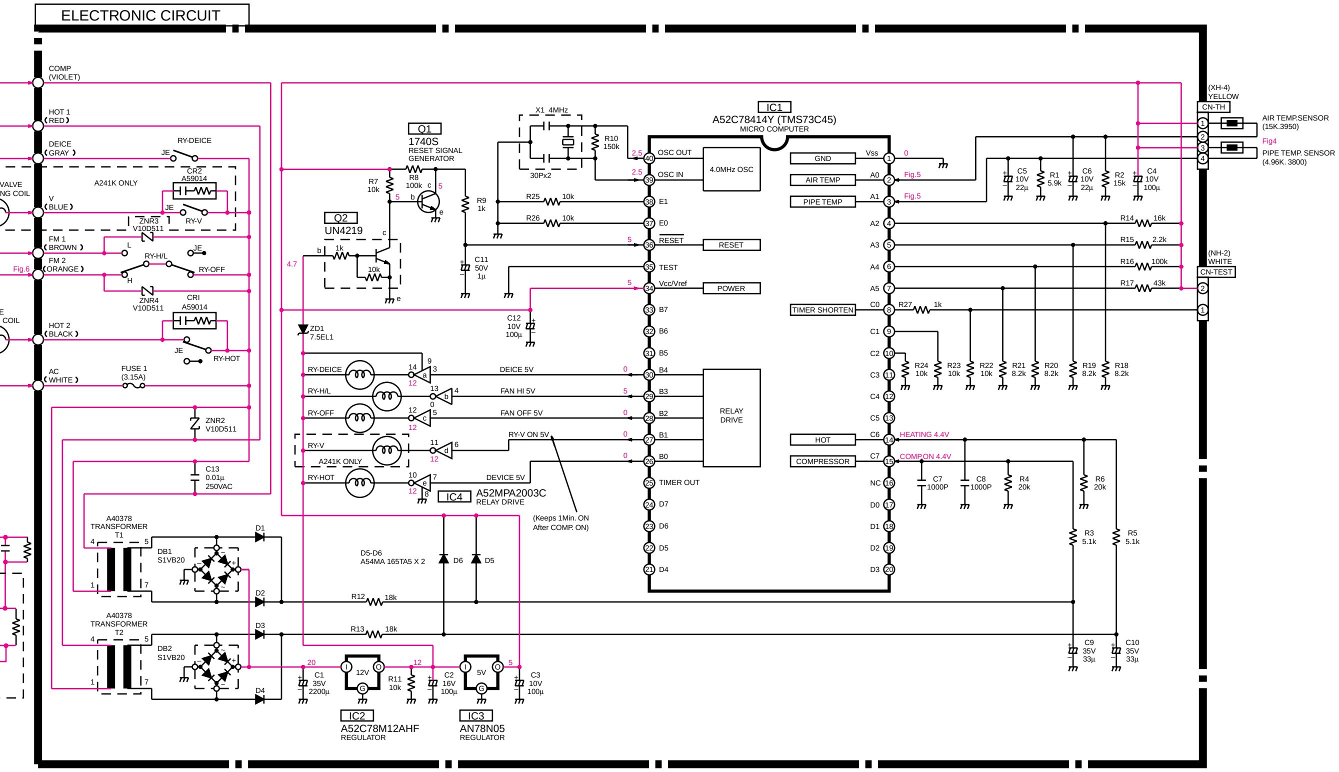
	CS-A181K	CS-A241K
R49	20.0k	11.3k
R7	33.2k	32.4k

SCHEMATIC DIAGRAM 2/3


AC 220-240V
50Hz
SINGLE PHASE
POWER SUPPLY SWITCH
TEMPERATURE FUSE 102°C
TRANSFORMER CWA40C246
(XH-3) BLUE
CN-FUSE 1
(VH-2)
CN-T
T (BLK)
HOT (RED)
DEICE (BLU)
TEMPERATURE FUSE 113°C
CN-FUSE2
AC (WHT)
ZNR2
R10 47k
R70 47k
RY-HOT CWA00161
RY-PWR
FUSE 3.15A
ZNR1
C1
LF1
C5 250VAC 0.1µ ECQ-UV
R1
DB1
LF2
C3
C4
2 WAY REVERS
CAPACITOR
4 WAY VALV REVERSING
O.L.P. (TEMP)
WHITE
YELLOW
COMPRESSOR
BLUE
RED
REACTOR
TRANSFORMER T1
RY-L
RY-C
ELECTRONIC CONTROLLER
(GREEN) (XH-3)
CN-MTR
U V W
FAN MOTOR
FAN MOTOR COIL RESISTANCE (AT 20°C)
YELLOW
BLUE
RED
TRADE MARK
COMPRESSOR TERMINAL
IC7 A52BX8315 FAN MOTOR SPEED CONTROL
PULSE SIGNAL GENERATOR
OSC
AMP.
VOLTAGE CORRECTION
4.3k 39.2k 15.8k 21.5k 8.87k 35.7k 3k 5.23k 20k 8.06k 1000P 22Ω 10k 51.1k 2.74k 102k 51.1k 34.0k
C21 1000P
C20 16V 100µ
R18 13.0k
VR1 500Ω
R17 1.74k
R47 91Ω 1W
C22 16V 100µ
R19 2.49k
D24 MA723
R46 1k
BZ
IC3 AN78N05 REGULATOR
C16 16V 100µ
C27 25V 100µ
R20 10k
R13 10k
C15 25V 100µ
IC2 A52MPC78M12H REGULATOR
C31 35V 2200µ
C14 35V 2200µ
DB2 S1VB20
C23 0.022µ
Q3 UN4211
C17 0.1µ ECQV
R14 5.1k
R71 1k
R12 10k
PC TL520
C13 10µ
C12 0.01µ
C19 1000P
R16 100k
L3 CWA43036
L4 CWA43036
C42 100V 470µ
C10 0.18µ ECQV
R6 10k 1/2W
C9 100V 470µ
C8 630V 3300P ECQF
L2 CWA43036
D2 M653
T1
R3 12k 2W
R11 12k 2W
C7 8200µ
D1 A54RB44-08V
R15 24.9k
R7
R8 0.47Ω 2W
C18 50V 4.7µ
Q2 2SD2220 AMP
R9 1.5k
C11 0.01µ
Q1 2SC4300M D.C → A.C CONVERTER
R4 24Ω 2W
R5 100Ω
250VAC 0.01µ ECQ-UV X 2
C6 450V 270µ
R2 560k 1/2W
L1 CWA 43101
T2
D3 1SS131
Q16 A52MP3009 FAN MOTOR DRIVE
R51 2.4k 1W
R52 2.4k 1W
R53 2.4k 1W
Q8 UN4211
Q9 UN4211
C34 100V 10µ
R48 620Ω
Q13 UN4211
Q14 UN4211
Q15 UN4211
R54 750Ω
R55 750Ω
R56 750Ω
Q11 UN411F
Q12 UN411F
4.7k
Q17 A52MP3005 FAN MOTOR DRIVE
R57 5.1k
C39 1000P
D7
R58 510k
R50 3.3k 1W
C35 100V 10µ
R60 14.7k
C38 1000P
C36 1000P
IC6 A52MPC393C FAN SPEED CONTROL
R59 3.32k
C37 1000P
D10 D9 D8 D13 D12 D11
R63 10k R62 10k R61 10k R66 10k R65 10k R64 10k
D8-D13 A54MA165TA5 X 6
14 (15)
3.0 3.3 6.0 1.6 0.5 8.5 (8.2) 8.8 (8.5)

MODEL	CS-A182KR	CS-A242KR
R37	15.40k	15.40k
R38	12.00k	12.00k
R39	7.32k	10.20k
R40	5.36k	8.25k
R41	3.83k	6.49k
R42	3.16k	5.36k
R43	2.49k	4.42k
R44	2.10k	4.12k

SCHEMATIC DIAGRAM 3/3



ELECTRONIC CIRCUIT
COMP (VIOLET)
HOT 1 (RED)
DEICE (GRAY)
RY-DEICE
JE
CR2 A59014
A241K ONLY
VALVE
NG COIL
V (BLUE)
JE
RY-V
ZNR3 V10D511
FM 1 (BROWN)
L
JE
RY-H/L
FM 2 (ORANGE)
Fig.6
RY-OFF
H
ZNR4 V10D511
CRI A59014
E COIL
HOT 2 (BLACK)
JE
RY-HOT
AC (WHITE)
FUSE 1 (3.15A)
ZNR2 V10D511
C13 0.01µ 250VAC
A40378 TRANSFORMER T1
DB1 S1VB20
D1
D2
A40378 TRANSFORMER T2
DB2 S1VB20
D3
D4
Q1 1740S RESET SIGNAL GENERATOR
R7 10k
R8 100k
R9 1k
Q2 UN4219
C11 50V 1µ
X1 4MHz
30Px2
R10 150k
R25 10k
R26 10k
C12 10V 100µ
ZD1 7.5EL1
4.7
RY-DEICE
RY-H/L
RY-OFF
RY-V
A241K ONLY
RY-HOT
DEICE 5V
FAN HI 5V
FAN OFF 5V
RY-V ON 5V
DEVICE 5V
IC4 A52MPA2003C RELAY DRIVE
(Keeps 1Min. ON After COMP. ON)
D5-D6 A54MA 165TA5 X 2
D6
D5
R12 18k
R13 18k
C1 35V 2200µ
IC2 A52C78M12AHF REGULATOR
12V
R11 10k
C2 16V 100µ
IC3 AN78N05 REGULATOR
5V
C3 10V 100µ
IC1 A52C78414Y (TMS73C45) MICRO COMPUTER
4.0MHz OSC
OSC OUT
OSC IN
E1
E0
RESET
TEST
Vcc/Vref
POWER
B7
B6
B5
B4
B3
B2
B1
B0
RELAY DRIVE
TIMER OUT
D7
D6
D5
D4
GND
Vss
AIR TEMP
A0
PIPE TEMP
A1
A2
A3
A4
A5
TIMER SHORTEN
C0
C1
C2
C3
C4
C5
HOT
C6
COMPRESSOR
C7
NC
D0
D1
D2
D3
HEATING 4.4V
COMPON 4.4V
Fig.5
Fig.5
C5 10V 22µ
R1 5.9k
C6 10V 22µ
R2 15k
C4 10V 100µ
R14 16k
R15 2.2k
R16 100k
R17 43k
R27 1k
R24 10k
R23 10k
R22 10k
R21 8.2k
R20 8.2k
R19 8.2k
R18 8.2k
C7 1000P
C8 1000P
R4 20k
R6 20k
R3 5.1k
R5 5.1k
C9 35V 33µ
C10 35V 33µ
(XH-4) YELLOW
CN-TH
AIR TEMP.SENSOR (15K.3950)
Fig4
PIPE TEMP. SENSOR (4.96K. 3800)
(NH-2) WHITE
CN-TEST